A COMPARATIVE STUDY OF DREAMS AND RELATED FANTASIES

By

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Like the protagonist in my favorite fantasy story, *Alice's Adventures in Wonderland*, by Lewis Carroll, I have undergone major life transformations while exploring this research. There were times when I felt much too small for the huge task before me. There were times when I felt lost and perplexed, as if lost in the Queen's maze of rose hedges. There were times when talks with the statistician seemed like conversations with the Mad Hatter. There were times when I heard the White Rabbit's warning, "I'm late, I'm late, for a very important date," and experienced my own sense of urgency to submit the finalized dissertation. And there were times when I felt sure I'd never wake up from the dream.

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TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS ii

ABSTRACT vi

CHAPTER

I. INTRODUCTION 1

Background 1
Research Findings 5
Conceptualization and Hypotheses 22

II. METHOD 28

Subjects 28
Raters 28
Judges 29
Instrumentation 29
Procedure 30
Data Collection 30
Protocols 34
Sorting Procedures 34
Rating Procedures 36
Analyses 37

III. RESULTS 38

IV. DISCUSSION 79

Hypothesis 1 82
Hypotheses 2 and 3 86
Hypotheses 4 and 5 91
Hypothesis 6 93
Hypothesis 7 95
Hypothesis 8 96
Conclusions and Implications 96

APPENDIX

A. SELF-EVALUATION QUESTIONNAIRE 101
B. DREAM DIARY 102

Page

APPENDIX

C. ORAL INSTRUCTIONS FOR FREE FANTASIES 104
D. THOUGHT SAMPLE RESPONSE FORM 105
E. TAT RESPONSE FORM 106
F. INSTRUCTIONS FOR JUDGES 107
G. GUIDELINES FOR RATERS 109

REFERENCES 111

BIOGRAPHICAL SKETCH 117

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An issue which warranted research attention was whether the dream report was significantly different from other forms of internally-generated fantasy reports. Studies which had previously compared dreams and projective fantasy materials had partially and unsystematically explored this issue. No systematic examination of fantasy mentation obtained from four fantasy sources within the same group of subjects has been reported.

Four independently derived written fantasy samples from each of 48 subjects were compared. Varying in degree of structure, fantasy samples produced by subjects were dreams, free fantasies, written samples of significant life experiences, and stories in response to Thematic Apperception Test (TAT) cards. The subjective evaluations of a heterogeneous group of six judges were employed as the "criterion of comparison."

Overall, judges were able, at a greater than chance level, to identify each of the four fantasy materials belonging to a single subject. That is, on the individual level, the relationship among content-related aspects of various forms of fantasy were significantly related. This was found to be true as well with respect to a structural property (word count) of fantasy materials. These findings supported the notion that dreams, free fantasies, written samples, and TAT's are orderly, non-random events which reflect a common source of fantasy rather than unique types of fantasy.

Four forms of fantasy mentation were evaluated, not only in relationship to the individual but also in relationship to two selected, independently defined group differences. Each of the fantasy levels was found to be significantly sensitive to sex membership and test-reported anxiety level.

The results of this study supported the viewpoint that various forms of fantasy mentation are "splinters" from a common source. Each may be a more sensitive reflector of particular individual characteristics, yet all are sensitive to and capable of revealing individual and group differences. In summary, fantasies, whether originating during a waking or sleeping state of consciousness, are more similar than different and appear to emerge from the same primary process pool. They are all equally useful as clinical tools.

CHAPTER I

INTRODUCTION

Background

Human beings spend most of their time engaging in some kind of mental activity, much of which consists not of ordered thought, but of bits and snatches of inner experience: wandering internal monologues, daydreams, fantasies, dreams, reveries, and so on. All of these so-called "wool-gathering" activities have received both clinical and artistic but very little scientific attention, with the exception of dreams. Indeed, the first book devoted entirely to the topic of daydreaming was not published in the United States until 1966, entitled Daydreaming, by Jerome L. Singer. Klinger (1971) maintains in his book, Structure and Functions of Fantasy, that "after millennia of philosophical inquiry into mind, a half century of experimental analysis of consciousness, and a further century of experimental analysis of behavior, very little is actually known about fantasy" (p. 4). Therefore, lacking a conceptualization and methodology for studying the covert process of fantasy, past investigators found themselves relying on "fantasy-like" processes, in an attempt to gain insight into these ephemeral and fleeting thoughts. This included investigations of free play, studies of psychotic language, Thematic Apperception Test stories, and Rorschach inkblot responses, to name a few. These "substitutes" for fantasy were sometimes confused for the real thing, leading to misconceptions and ill-founded notions regarding normal fantasy. In comparison, dreams of the night have received significant scientific notice, particularly beginning with the discovery in 1953 by Aserinsky and Kleitman that dreaming could be objectively identified by EEG patterns. The resulting research technology enabled investigators to systematically and objectively explore dreams and dreaming.

While historically the major psychologists have disagreed on the functional significance of dreams, they have all agreed on the importance attributed to dreams. Freud, for example, viewed dreaming as the preserver of sleep. The dream was hypothesized to represent an unfulfilled, repressed wish which was expressed in disguised form (Freud, 1958). Jung saw the dream's purpose to be twofold. Activities of the dream supposedly compensated for conscious orientation to balance out the personality. In addition, some dreams expressed universal tendencies about man's nature through expression of the collective unconscious (Jung, 1933). Adler viewed the dream as preparation for the subsequent day's activity—a dress rehearsal for waking life. While their proposed theories differ, their underlying assumptions appear strikingly similar. They all assume that dreams are meaningful, non-random events in that they bear some relationship, whether overt or covert, to the waking life of the dreamer.

Dominant psychological theories of the century have unequivocally maintained that dreams and fantasies represent a common psychological process. Freud (1953), in his paper on the relation of the poet to daydreaming, treated these two phenomena as though they were one and the same: "I cannot pass over the relation of fantasies to dreams. Our nocturnal dreams are nothing but such fantasies. . . . Language, in its unrivaled wisdom, long ago decided the question of the essential nature of dreams by giving the name of 'daydreams' to the airy creations of fantasy" (p. 67).

Psychoanalysts have since maintained that fantasies, including dreams, daydreams, myths, and artistic productions tap the same underlying psychological process (wish fulfillment). According to Freud, "every separate phantasy contains the fulfillment of a wish, and improves on unsatisfactory reality" (in Feshbach, 1955). Thus, unsatisfied wishes were conceptualized by Freud and others as the driving power behind fantasies. Freud and his successors have also maintained that these various "splinters of fantasy" share "primary process" as a common structural style.

Piaget (1962) has asserted that both the content and the symbolic structure of children's dreams and symbolic play are intimately related. On the basis of systematic and naturalistic observation, Piaget concluded that all imaginative thought was, in fact, "interiorized play." Although psychoanalytic theorists had arrived at the same conclusion, that fantasy and play were a single process, they viewed fantasy as a prior process which eventually led to motoric expression in play (Rapaport, 1951), rather than the reverse developmental order.

Adler also expressed the belief that dreams parallel events of waking life (in Klinger, 1971). Apparently, however, Adler saw little need for distinguishing dreams from imaginative thought, for he felt that they equally expressed an individual's waking style of life (Jones, 1974). That is, the Adlerian notion views dreams as working on solutions to current problems derived from waking conscious experience. Other theorists expressing a similar view include French, Hall, and Fromm, to name only a few (Kramer & Whitman, 1969).

The notion that fantasy and dreams share the same properties and serve similar functions is extensively shared by various theorists. Until very recently, however, there has been little impetus for empirically verifying the similarities between fantasies and dreams, and few investigations of the relationship have been attempted (Klinger, 1971; Singer, 1966). Furthermore, the few studies which have compared fantasies and dreams have largely employed structured stimuli such as TAT stories, Rorschach responses, etc., rather than collecting spontaneous or free fantasies in situ. This strong reliance on "substitute," and hence artificial fantasy material, has probably introduced bias into the interrelationships between normal fantasy and dreams, as well as contributed to contradictory findings.

Research Findings

Content variables related to dreams and projective fantasy have been systematically investigated. Tomkins (1942) reported that dream life found representation in imaginative production of the Thematic Apperception Test (TAT), based on comparison of major themes of the TAT and manifest content of a single subject's dreams. Similarly, Sarason (1944), employing 34 mentally defective subjects, compared TAT stories with dreams, and found, in general, that dream material and stories were similar. Sarason arrived at this conclusion despite the fact that all major TAT themes were not represented in the dream reports. A more comprehensive study which confirmed Sarason's impressions, was carried out by Gordon in 1953, using a Need-Press Analysis to compare dream responses to TAT responses. Gordon took 29 psychiatric patients and, on the basis of 42 content variables (e.g. aggression, affiliation, sex, dependency, independence), compared ratings between dreams and TAT's. Eleven of the 42 TAT-Dream correlations were found to be statistically significant, and 32 were positive. Gordon concluded that a definite and reliable relationship, although not a particularly close one, existed between the type of content found in subjects' dreams and their TAT stories. Although all of these studies suffer from numerous methodological flaws, they do indicate at least a moderate relationship between thematic content of TAT stories and morning-after dream reports.

In addition to content variables, TAT's and dreams have been compared on the basis of structural variables. Structural variables refer to the manner in which an individual interprets a fantasy stimulus, i.e., how the response is given as opposed to what is given (Kagan & Lesser, 1961). Foulkes and Rechtschaffen (1964) found structural similarities between waking TAT fantasies and nocturnal REM-sleep mentation, but not between waking TAT fantasies and NREM-sleep mentation. Also, they found little systematic relationship in "instinctual content" between TAT stories and REM reports. In a later study by Foulkes, Pivik, Steadman, Spear, and Symonds (1967), with 32 boys ages 6 through 12, they found no relationship between the structure of Children's Apperception Test (CAT) scores and dream scores. These authors concluded that "styles of mental approach are not nearly so stable or consistent across the sleep-wakefulness border for children as they are for adults" (p. 463).

Fiss, Klein, and Bokert (1966) have initiated a different strategy for assessing the relationship between dream states and waking TAT fantasies. To obtain fantasies, subjects were awakened from REM period and were asked for fantasies in response to TAT cards. They found that dream reports and corresponding fantasies were strikingly similar in content. They concluded that when a REM-dream is aborted, a waking fantasy appears to take on some of the characteristics of dream mentation. Hence, dreams and fantasies may serve a similar purpose or function.

A series of related studies involving dream deprivation have also attempted to show a functional relationship between dreams and fantasies. A dream deprivation study reported by Cartwright (1969) found that "on those nights when a secondary process task was required of the subjects during the deprivation awakenings, more REM compensation followed than on nights when primary process material was elicited" (p. 365). A study by Palmer (1963) had also reported a relationship between waking fantasies (Rorschach scores) and total sleep deprivation. Palmer found a tendency for a balance shift toward the introversive side of the M:Sum C ratio on the Rorschach, following total sleep deprivation. Similarly, Lerner (1966) found a significant positive relationship between human movement responses (M) on the Holtzman inkblots and REM-dream deprivation. A later study by Cartwright, Gore, Hancock, McCarthy, and Weiner (1973) further confirmed the previous studies which had found an increase in Rorschach human movement responses and a shift to the introspective side of the experience balance following REM deprivation. All these studies imply a specific need for primary process thinking which is unsatisfied by other secondary forms of mentation.

It can be observed that the results from the above-mentioned studies, which have compared content and/or structural aspects of projective fantasies and dreams, are replete with inconsistencies. For instance, the Foulkes and Rechtschaffen (1964) and Foulkes et al. (1967) studies differed from the earlier reported studies with respect to technique for collecting dream reports. The earlier studies used "morning-after" dream reports rather than REM-EEG "sleep-interruption" dream reports; an observation which may aid in explaining some of the inconsistent research results. In contrast to earlier studies, dreams obtained by the sleep-interruption method have been found, as a rule, to resemble TAT fantasies with respect to structural properties but not with respect to thematic content (Klinger, 1971). Additionally, studies comparing TAT and dreams have differed both with respect to subject classification (i.e. some studies have utilized normal subjects and others, psychiatric subjects) and age of subjects. Also, Hall and Van de Castle (1966) have called attention to the fact that researchers, when comparing dreams and TAT's have typically imposed on dream protocols scales which were originally constructed solely for purposes of measuring TAT stories (Kagan & Lesser, 1961). Besides being a somewhat arbitrary and inappropriate classification system with dreams, the TAT "need" scores have also been found to be highly unstable. Thematic Apperception Test repeat reliability has been shown to depend, in part, on time elapsed between successive administrations, stability of the personality being tested, and stability of the individual's environment (Tomkins, 1942). The lack of consistent research findings between dream reports and TAT stories is better understood in light of the above observations.

In addition to these shortcomings, researchers have mistakenly viewed projective fantasy material as providing adequate representation for normal waking free fantasy. Both Holt (1961) and Singer (1966), however, considered them to represent dramatically divergent processes. Klinger (1971) also viewed these two forms of fantasy as being highly different. He defined projective fantasy as ". . . a subject's overt symbolic behavior when he is confronted with a more or less standard, more or less ambiguous stimulus, and is instructed to communicate to an examiner certain of his responses to it . . ." (p. 90), whereas, free fantasy was defined conceptually as ". . . spontaneous covert symbolic activity that is not part of a perceptual scanning process or of directed problem solving. It is spontaneous in the sense that its production occurs without deliberate interference from an examiner" (p. 90). It should be apparent from these definitions that when we talk about normal waking fantasy we are dealing with a broad range of cognitive processes and products. The difference between free and projective fantasy may have major psychological implications. Klinger (1971) has concluded in his exhaustive study of fantasy that the relevance of projective fantasy to free fantasy remains to be established by empirical examination.

When other classes of fantasies, other than those obtained by projective techniques, have been compared to dream mentation, consistent support for the notion that these two forms of thought tap into an underlying psychic process is revealed. Beck (1967) systematically examined the relationship between daydreams and nightdreams with respect to thematic content and found that in eight out of ten patients themes of daydreams appeared in most or all of the corresponding nightdreams. Another study (Foulkes, Larson, Swanson, & Rardin, 1969) involving a structural and content analysis of male dreams of institutionalized and control subjects, found a direct carryover of the wakefulness role a person assumes to the role he assumes in his own dreams. Starker (1974) compared daydreaming styles with nocturnal dreaming. He hypothesized that the three daydreaming factors described by Singer and Antrobus (1963) (i.e. conflictual or negative daydreaming, positive daydreaming, and anxious, distractible daydreaming) reflected fundamental qualities of fantasy life which would also be reflected in sleeping fantasies. Starker found profound and significant differences in dream structure among subjects of differing daydream styles. In a similar study, Amanat (1974) employed a content analysis method, as well as a structural approach, in comparing daydreams and nightdreams of emotionally disturbed adolescents. Elaborate steps were taken in this study to reduce the effects of methodological shortcomings. Self-report daydreams were compared to nightdreams, collected by the morning-after method, for subjects in two psychiatric groups (inpatient and outpatient) and one normal control group. Amanat found positive correlations between content themes of "repetitive daydreams" and nightdreams in each subject, with much greater correlations occurring in the inpatient psychiatric group than in the other two groups. There were also significant differences between the contents of daydreams and nightdreams in the psychiatric and control population groups, with various degrees of positive correlations in each subject and/or group of subjects. This study differed significantly from previously reported studies in that repetitive or reoccurring daydreams were introduced as a point of comparison with nightdreams.

Utilizing yet another form of fantasy, Cartwright (1966) compared dream and drug-induced fantasy behavior. Dreams were collected by use of the REM-EEG sleep interruption technique, and drug-induced fantasy content was collected during a 4-hour time period. During this time, subjects were instructed to give a running verbal account of their experience as it occurred. Despite evidence which suggested that dream responsiveness and drug responsiveness formed two independent patterns, Cartwright found convincing evidence to show that drug-induced fantasies were, indeed, drawing from the same source as normal dream content during wakefulness. First, subjects experienced difficulty subjectively differentiating the two states. Second, there was a dramatic reduction in both the amount of time spent in REM and a lower REM% the night following the drug session. And more conclusively, blind matching of the dream content and hallucinatory content records by a clinical psychologist was correctly made at a very high level of significance. Also, correct matches were much more likely to occur when the collection sequence of the two experiences was Drug-Dream rather than Dream-Drug. This study was particularly impressive in view of the fact that an average of 12 days elapsed between collection of the two sets of data, ruling out the possibility that correct matches were made on the basis of superficial similarities.

Additional evidence supporting the contention that dreams and fantasies tap into similar underlying psychic processes has been provided by researchers investigating individual differences. These studies have used other than projective fantasies and have given rise to important findings.

Some investigators have focused not only on the relationship between dreams and fantasies, but on the potential of these two phenomena to serve as accurate predictors of subjects in predetermined criterion groups. Kramer, Baldridge, Whitman, Ornstein, and Smith (1969) were interested in demonstrating that dreams reflect differing personality configurations and are capable of furnishing clues to areas of significant differences among diagnostic groups. With respect to manifest content of recalled dream reports, Kramer et al.(1969) found significant differences between two diagnostic groups (paranoid schizophrenic and depressed) and a control group. In a study by Segal (1974), fantasy material was used as criterion for prediction of potential drug users. Seventy percent of the non-drug users were correctly predicted as to group membership. Gold and Robertson (1975) collected night and day imagery of selected psychotic children and found dream content to be different from that of normal children of the same sex and age. These studies are compatible with, and partially support, the notion that dreams and fantasies reflect stable underlying personality differences.

In an important study, Cartwright, Monroe, and Palmer (1967) examined the relationship between day and nighttime behavior through a REM deprivation technique. Ten normal, young, adult subjects were REM-deprived for three nights in an effort to understand "where the dream goes" when an individual is REM deprived. Cartwright et al. (1967) hypothesized that dream-like mentation was ongoing but ordinarily only reached conscious awareness during REM sleep conditions. Further, when this REM state was artificially limited, subjects' ability to productively utilize an analogous state such as daydreaming, and thus avoid detrimental effects of REM deprivation, was hypothesized to be contingent upon an individual subject's response style to REM deprivation. These hypotheses were confirmed in this study which also found at least three different patterns of relationship between daytime fantasies and nighttime dreams (disruption, substitution, and compensation).

Cartwright extended this notion of individual differences in a study with Ratzel (Cartwright & Ratzel, 1972). A consistent relationship between subjects with high and low REM-onset fantasy responses and their reactions to REM deprivation was found. High REM-onset fantasizers showed little or no post-deprivation test change on Rorschach, Wechsler Adult Intelligence Scale (WAIS), and other test scores, following REM loss, in marked contrast to low REM-onset fantasizers. Cartwright and Ratzel noted that "those who have a good deal of dream and fantasy material to report at the REM-onset awakenings do not show as much compensation after three nights of deprivation as those who had little or none" (p. 365).

In the above two studies, the variable which seemed most vital to determining subjects' reactions to REM deprivation was the degree to which dream-like activity was limited to REM periods during the night.

Several of the above-mentioned studies (Cartwright, 1966; Cartwright et al., 1973; Cartwright et al., 1967; Cartwright & Ratzel, 1972; Fiss et al., 1966; Lerner, 1966; Palmer, 1963) have attempted to unravel the functional relationship of dreams and fantasies by examining the extent to which dream-like activity was manifested in analogous waking states. This has typically been observed by removing the dreaming phase from sleep and monitoring the effects of the loss on related states of consciousness. Cartwright (1969) has recently pointed out that this subtraction strategy has taught us a great deal about the REM state but very little about dreaming in particular. There has been accumulated evidence that when REM time is restricted there is pressure built up for REM restoration (Cartwright, 1969). Thus, the REM state serves some repetitive need. This in no way assures any similar need quality to "the dream." In short, the need for the REM state may be independent of the psychological need for dream content. Cartwright (1969) has proposed the following hypothesis: "They may both serve needed functions which are independent of each other. REM time may represent one convenient set of conditions for the dream to take place. However, there may be other conditions, and if the REM state is removed or reduced, the dream may become dissociated from it and appear elsewhere" (p. 362). This hypothesis was strongly supported by an earlier reported study (Cartwright, 1966) which found a striking similarity between the content of dreams and drug-induced fantasy behavior during REM deprivation. Cartwright was implying that the dream experience is capable of becoming dissociated from the REM state, particularly when that state is in short supply, as in REM deprivation conditions, etc. If this were true, one would expect to find little, if any, significant difference in the content and structure of dreams and normal fantasies. In fact, a more recent study by Foulkes and Fleisher (1975), using EEG and EOG recordings and subjective criteria, has shown that subjects when in an awake and relaxed state experienced hallucinatory and/or regressive mentation, independent of the sleep state.

In the attempt to establish an underlying relationship between various forms of waking and nighttime mentation, studies have largely been focused upon dreams and projective fantasies and, more recently, upon dreams and free fantasies. However, some attempts have also been made to compare dreams with dreams within individuals and to compare daydreams with projective fantasies.

The results of studies which have examined dreams in sequence also imply some underlying ego process which is stable over time and is consistently reflected in dreams of an individual. Dement and Wolpert (1958) examined the relationship of four or more dreams occurring across the same night with respect to manifest content. They found considerable relatedness among dreams occurring on the same night, even to the extent of all dreams being interrelated by expressing variations of the same theme or a continuing development of the initial action. This finding was supported by Offenkrantz and Rechtschaffen's study (1963) which found not only continuities of sequential dreams, but also that similar elements in the manifest contents of dreams consistently reoccurred in the same ordinal position of sequences on different nights. Another study (Trosman, Rechtschaffen, Offendrantz, & Wolpert, 1960) rarely noted any direct relationship among the manifest content of sequential dreams of a night. However, they did note the appearance of unique elements at similar points in a dream sequence, suggesting the organization of manifest dream contents into regular patterns. A tendency for a cyclic relationship in latent content of sequential dreams was also reported. Kramer, Whitman, Baldridge, and Lansky (1964), in an examination of the interrelationship of dreams of a night, clinically and experimentally confirmed the presence of a sequential pattern of dream content, with a repetitious dream pattern representing a pattern which was on an opposite end of a continuum from sequential dreams. A more recent study by Kramer, Czaya, Arand, and Roth (1974) also confirmed previous findings that the psychological dream experience has a developmental course across the REM periods of a night. This trend was supported in a study by Kramer et al. (1964) by use of experimenter ratings, subject ratings, and ratings of manifest content. Findings from the above-reported studies are consistent with Freud's assumption that "dreams of a single night are part of a single whole" (1958, pp. 333-334) and are capable of revealing individual differences.

A relationship has been demonstrated between projective fantasies (TAT and Rorschach) and free fantasies (daydreams), but the specific nature of this relationship is equivocal. For example, Page (1957), employing a questionnaire method of collecting daydreams, compared the frequency of reported daydreaming to a number of Rorschach variables. He found that the number of human movement responses proved to be the only scoring category significantly associated with daydream frequency. In an earlier study, Page (1956) had also compared the frequency of reported daydreaming to abbreviated TAT responses. He found the TAT with respect to productivity and emotional tone did not differentiate groups of high and low frequency daydreamers. There was a tendency, however, for "richer" TAT themes to be produced by low productive daydreamers. An analysis of the relationship between comparable daydreaming and TAT themes did suggest an inverse relationship between everyday fantasy and elicited TAT fantasy. These studies were discrepant and suggest the need for additional research.

To date, tremendous gaps remain in our understanding of the relationship between dreams, normal fantasies, and fantasy-like phenomena. Until quite recently, investigators have lacked sophisticated methodology for examining fantasy in its more natural form (i.e. an ongoing process) and have tended to examine it in an unnatural, encapsulated form only, as seen in previously reviewed studies which typically relied upon TAT responses, etc. According to Klinger (1969), the topic of free fantasy has consequently been virtually neglected by researchers during the past forty years. Investigators who have attempted to get at free fantasy in its more natural form have generally requested subjects to describe a recent daydream in detail, or to estimate the frequency of various kinds of daydreams (Klinger, 1971). Whatever the method, techniques for verbally reporting fantasies carried liabilities as well as advantages. Fantasies are often nonverbal (as are dreams) and hence proved difficult to verbalize or clearly express. Methods which required recall of daydreams that took place more than a few seconds earlier also took a risk, since vivid fantasies were rapidly forgotten (Klinger, 1971). However, some promising techniques have been developed. One was "thought-sampling"—i.e., requesting reports of fantasies as they occurred in time, as an ongoing process (Klinger, 1971). Another was an approach developed by Bertini, Lewis, and Witkin (1964) who originally designed procedures for use in studying hypnagogic and related phenomena, utilizing subjects "thinking out loud." Subjects were requested to verbalize their thoughts continuously as they occurred in time. Other investigators, such as Cameron, Frank, Lifter, and Morrissey (1968), have asked subjects to report recalled thoughts prior to an experimental interruption. Gottschalk and Gleser (1969) have asked subjects to talk for 5 to 10 minutes about a meaningful and significant life experience. Klinger (1974) has more recently experimented with various methods of thought-sampling. Similar to the approach of Bertini et al. (1964), Klinger has required subjects to verbalize continuously for a period of 5 to 30 minutes. Rychlak (1973) has also experimented with free imagery associations with high school students during half-hour sessions. Foulkes and Fleisher (1975), employing techniques developed in dream research, have asked subjects to report, upon an auditory signal which appears at randomly selected times from 1 to 9 minutes, their very last, presignal experience. Kripke and Sonnenschein (1973) have also employed sleep research methods for collecting free fantasy. In one study, each of 10 subjects was isolated in a room and was required to write on a card a summary of "what he was thinking" during successive 5-minute intervals.

These research techniques for tapping ongoing fantasies and thoughts have led to a better understanding of the relationship between waking and sleeping states. Earlier studies had shown that these states were not discrete but continuous. For example, Cartwright (1966) found evidence that dream mentation was not restricted to the sleep state but could enter consciousness during the waking state as well. Foulkes and Vogel (1965) had also demonstrated that the processes seen in dreams were by no means confined to REM periods but could be seen in waking fantasy, hypnagogic imagery, etc. That dream-like states are not confined to REM periods of sleep has also been supported in studies such as that of Fiss et al. (1966) which showed a "carry-over" effect from dreams to waking fantasies (TAT's). Demonstrably, waking and sleeping states are continuous not only with respect to psychological processes, but also with respect to various rhythmic biological and physiological processes. Kripke and Sonnenschein (1973) found evidence of a significant 90-minute rhythm in daytime fantasy characteristic of REM nighttime cycles of EEG activity. An excellent article by Globus (1966), reviewing findings on cycles in real time, supported the notion that the REM state is essentially a time-locked psychophysiologic process which periodically emerges and does not have a fundamental relationship to sleep or other special conditions.

Apparently, then, normal fantasy is susceptible to many of the same effects of activation as are dreams, is seemingly continuous with dreaming in time, shares many of the same properties as dreams, but in different proportions, and may serve at least some of the same functions. The intimation is that fantasy and dreams are continuous (i.e., aspects of a unitary continuing fantasy process) and are structurally and functionally closely related. However, Singer (1976) has pointed out that we need more extensive samples of ongoing daytime thoughts before we can be certain that nighttime mentation does not have unique properties with respect to waking mentation.

Conceptualization and Hypotheses

The validity of generalizing from dream material to fantasy production, and vice versa, depends on the proposition that the two psychological processes are highly related and that for at least some purposes the one may stand as an analogue for the other. To date, this assumption has not received adequate empirical verification, particularly with respect to spontaneous fantasy. Although many research studies have attempted to provide answers to this intriguing question, none have allowed for adequate comparisons between studies, due to lack of consistency in choice of subject populations, techniques, criterion variables, definition of terms, categories of analysis, etc. Despite these drawbacks, there is at least general agreement that dreams and fantasies bear some consistent relationship to each other. The kinship of dreams with fantasy is reflected in a number of associations which viewed as a whole, seem persuasive, although not conclusive. Therefore, this study attempts to more closely explore the relationship between dreams, spontaneous fantasies, and structured fantasies.

Specifically, the questions posed in this research are as follows:

1. Are dreams, free fantasies, written samples, and TAT's meaningful to the clinician? That is, do each of the fantasy materials sensitively reflect individual as well as group differences?
2. Do all forms of fantasy material provide similar information regarding the individual and the group? If not, which materials are more useful?
3. Are fantasy materials (i.e. projective instruments designed to tap primary process mentation) only as good as the judge (examiner) utilizing them? Or can it be demonstrated that "fantasy expressions" are reliable and valid indices of personality differences as well?

In order to answer these questions, eight hypotheses were generated and tested. Each hypothesis, along with a brief rationale, is stated below.

Many theorists, including Freud, Adler, and Jung, have assumed that dreams are meaningful, non-random psychological events. Hence, dreams are expected to reflect, on the individual level, distinct differences between individuals.

Likewise, other splinters of fantasy expression are expected to be sensitive discriminators of individual differences. Such differences should be sufficiently characteristic of the individual to be distinguishable from person to person. Therefore, the following relationship is expected to be observed:

> Ho_1: Written productions arising from four different forms of fantasy mentation (dreams, free fantasies, written samples, and TAT's) of an individual have sufficient coherence to be recognizable as originating from the same individual.

On the group level it has already been demonstrated that differential psychological groups (i.e. normals versus psychiatrically disturbed individuals) and individuals of differing sexual membership display consistent differences with respect to dream content (Gold & Robertson, 1975; Kramer, Roth, & Cisco, 1976; Segal, 1974; to name a few). That other forms of fantasy expression would similarly reflect group differences has not been fully explored. Therefore, in this study, utilizing four different forms of fantasy materials, two criterion variables were chosen for differentiating subjects into known groups.

First, sex, which is one of the most highly researched variables was chosen. Previous research has demonstrated that male-female differences in dream content is an accepted fact which has been most clearly and consistently demonstrated in non-laboratory dream studies (Winget & Kramer, in press).

Since dreams are only one form of fantasy mentation, we expect other forms of fantasy to similarly reflect group differences, particularly with respect to sex.

Secondly, anxiety level was chosen as a relevant variable for differentiating subjects in terms of group membership. Anxiety was chosen as a sensitive discriminator, given its central role in the understanding of psycholcgical processes and its traditional acceptance as an index of emotional disturbance. In fact, in both the behavioral and medical sciences, anxiety has been viewed as a central explanatory concept in a majority of contemporary theories of personality and psychopathology. In this study, anxiety was operationally defined with respect to responses on the Self-Evaluation Questionnaire, STAI Form X-2, by Spielberger, Gorsuch and Lushene (1970).

By use of the above two criterion variables, sex and anxiety, the following four hypotheses are proposed:

Ho_2: Written productions arising from four different forms of fantasy mentation can be accurately and reliably sorted by judges into either of two discrete domains (male and female) according to subject's stated sex.

Ho_3: Written productions arising from four different forms of fantasy mentation can be accurately and reliably sorted by judges into one of three discrete domains (low, medium, or high) according to subject's obtained anxiety scores.

Ho_4: Judges' ability to successfully sort written fantasy productions according to sex is similar across the four forms of fantasy materials.

Ho_5: Judges' ability to successfully sort written fantasy productions according to anxiety level is similar across the four forms of fantasy materials.

Historically, psychologists and personality theorists have viewed primary process mentation to be unique to the individual and reflective of underlying psychological conflicts which are specific to the individual. Therefore, each level of fantasy material would be expected to be a reliable and valid index of personality differences. Hence, each fantasy level may reveal individual differences to judges. Therefore, subjects are expected to consistently reveal themselves to judges across dreams, free fantasies, written samples, and TAT's. The following relationship is expected to be observed:

> Ho_6: Subjects reveal their sexual identity consistently to judges across each of the four fantasy productions. A similar finding is expected to be observed with respect to subject's anxiety level.

Research findings have been stated previously which have shown that the content of dreams is significantly related to the content of several other forms of fantasy mentation. Given this consistency in content (what a person says) across fantasy levels, a similar consistency is expected in the structure (how a person says what he says) of fantasy mentation. Therefore, the following relationship is hypothesized to occur:

> Ho_7: Written productions from each of the four fantasy materials are correlated at a greater than chance level, according to structural analysis scores.

Previous research has also demonstrated that the content of fantasy mentation is sensitive to group differences.

Similarly, the structure of fantasy mentation is expected to be sensitive to group differences on at least some occasions. In particular, a significant and strong relationship between anxiety and quantity of verbal output has been documented repeatedly in the research (Balken & Masserman, 1940; Benton, Hartman, & Sarason, 1955; Westrope, 1953). Therefore, if each of the forms of fantasy materials is to serve as a sensitive index to group differences, the following relationship is expected to be observed:

> Ho_8: Structural analysis scores vary in relationship to subjects' anxiety levels on each of the four forms of fantasy productions.

CHAPTER II

METHOD

Subjects

Twenty-four male and 24 female volunteer subjects were obtained from a population of undergraduate psychology students at the University of Florida. With regard to age, college students were expected to be a relatively homogeneous group. However, any subject not within the age range of 17-25 was omitted from the study. With regard to sleeping conditions, college students were also expected to be a relatively homogeneous group. That is, undergraduate college students typically reside under similar living conditions (i.e. dorms or shared apartments).

Raters

Three raters were employed in this study. Two were undergrauate honor students in psychology and one was the principal experimenter. Both undergraduate raters were in their junior year of college and had had some previous experience as assistants in research. The experimenter had a master's degree in clinical psychology at the time this research was conducted.

Judges

Six judges were selected for use in this study. The judges represented a relatively heterogeneous group, varying along several dimensions: age, sex, clinical experience, academic credentials, and familiarity with fantasy materials.

Judge 1 was a female professor of philosophy with several years' training in Jungian psychology. Judge 2 was a female master's degree level English teacher who at the time of this study was self-employed as a potter. Judge 3 was a male graduate student in experimental psychology who was quite sophisticated in quantitative sleep research. Judge 4 was a male graduate research professor in experimental psychology with a well-known reputation in the area of experimental sleep research. Judge 5 was a female master's degree level graduate student in clinical psychology with an avid interest in the use of projective techniques. And finally, Judge 6 was a female professor in clinical psychology who excelled both as a clinician and as a sensitive interpreter of projective materials.

Instrumentation

A measure of reported trait anxiety was obtained from each subject in response to Spielberger, Gorsuch, and Lushene's (1970) Self-Evaluation Questionnaire, STAI Form X-2, (see Appendix A). This scale consists of 20 statements requesting persons to describe how they "generally" feel.

Specifically, subjects were asked to report the frequency with which they experienced a symptom of trait anxiety.

Spielberger et al. (1970) have reported a test-retest reliability coefficient on the STAI A-Trait Scale of $r = .86$ for males and $r = .76$ for females over a period of 20 days. It has also been reported with respect to validity that the correlations between the STAI A-Trait Scale, Cattell's IPAT Anxiety Scale, and the Taylor Manifest Anxiety Scale are moderately high for college students (between $r = .80$ and $r = .85$). Given the evidence for strong convergent validity of the trait anxiety scale, it was determined that this single measure of trait anxiety was adequate for rating a subject's general level of anxiety.

Procedure

Data Collection

The STAI A-Trait Scale was administered to all subjects during the first day of data collection. Subsequently, subjects' test scores were rank ordered and subjects were divided into three equal groups (high, medium, and low anxiety). The STAI A-Trait Scale was re-administered in the final stage of the study. A test-retest procedure was employed to assure the stability of subjects' membership in one of three previously designated anxiety groups. This procedure, allowing 30 days between initial and subsequent testing, revealed reliability coefficients of $r = .85$ for both males and females. This was highly consistent with the previously reported findings of Spielberger et al. (1970) and lent further support to the reliability of instrumentation employed in this study.

Dreams, free fantasies, and structured fantasies were collected from each subject. To eliminate possible "sequencing" effects of data collection, data were collected in a randomized Latin-Square fashion. That is, data were gathered such that each of the four fantasy productions collected occurred once in the first, second, third, and fourth position of data collection. This design provided for four different sequence possibilities of four fantasy productions each. For example, if

A = Home dreams
B = Five minute "written samples"
C = Free fantasies
D = TAT fantasies,

then data were collected in the following order:

A	B	C	D
B	D	A	C
C	A	D	B
D	C	B	A

A group of 12 randomly selected subjects was assigned to each of the above four sequences.

Dreams were collected by use of a morning-after technique. Subjects were asked to report each morning upon awakening their recalled dreams on a prepared questionnaire form (see Appendix B). Dreams were collected in this manner for 14 consecutive days from each subject.

Spontaneous fantasies were collected by two methods. One method, employing the basic format described by Kripke and Sonnenschein (1973), involved collecting fantasies in the dream laboratory. Subjects were asked to lie down and relax in a dimly lit, quiet room. At randomly selected intervals, ranging from 3 to 7 minutes, a buzzer sounded, at which time subjects were asked to write on an index card "what was going through their mind" just prior to the experimental interruption. A sufficient time interval occurred between each experimental interruption to allow subjects to record their responses. Five samples of waking free fantasies were collected in this manner over approximately a 30-35 minute period. Oral instructions, which were delivered to subjects in this phase of the study are presented in Appendix C. Since people have been reported to produce more fantasy-like materials during early morning hours when their body temperature is lowest, periods of data collection occurred at randomly dispersed times throughout the morning hours.

Another form of spontaneous fantasies, although slightly more structured, was collected by a second method, previously described by Gottschalk and Gleser (1969). Subjects were asked to produce three 5-minute "written samples" of a meaningful life experience. These samples were collected in the sleep laboratory (Appendix D).

A single investigator, using the aforementioned techniques in small group settings, collected the two forms of spontaneous fantasies. Both forms of spontaneous fantasies were employed in order to obtain an adequate and comprehensive sample of internally-evoked, spontaneous fantasy mentation.

Highly structured fantasies were obtained from each subject in response to 10 Thematic Apperception Test cards: numbers 1, 2, 4, 6BM, 6GF, 7BM, 9GF, 12M, 13MF, and 16 (the blank card). These particular TAT cards were chosen based on their capacity to elicit a wide range of responses.* Responses to all cards were obtained during a single session with a single examiner overseeing the testing session. Standard instructions (Murray, 1943) were given verbally and were also written at the top of each response sheet. To secure somewhat uniform and comparable samples, subjects were given only one sheet of paper per TAT card, and were asked to compose a complete story related to each test stimuli (see Appendix E). Subjects were tested collectively in small groups of four.

All dreams and fantasy productions, both spontaneous and structured, were obtained in a written rather than a verbal mode. Although fantasy material has been more commonly reported in a verbal mode, it was believed by the investigator that "consistency in reporting" was a crucial factor in this study. Gottschalk and Gelser (1969) have warned that researchers' inadequate understanding of how verbal and written methods of data collection affect data outcome, strongly warrants employing a single method of data collection within a single study. Since home dreams were, by necessity, written, the written method was chosen for this study.

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*M. Kramer, personal communication (1976).

Protocols

Dream reports (varying numbers), 3 written samples of life experiences, 5 free fantasies, and 10 Thematic Apperception Test reports were available from each of the 48 subjects.

The first and last dream report, the first and last written sample life experience report, and five free fantasies, and the responses to TAT cards 1 and 16 were typed on 3 x 5 index cards. These reports were transferred verbatim with minor exceptions onto index cards. On the recommendation of Cartwright, highly unique stylistic components were edited from the final prepared protocols. All cues indicating subjects' identity and sex were also omitted from each protocol.*

Sorting Procedure

A judges' sorting or cataloguing procedure was employed in evaluating a majority of the collected data. The traditional content analysis approaches for detecing individual and group consistencies across fantasy materials inevitably lent bias toward a particular fantasy material. Therefore, this approach was rejected and an alternative procedure was chosen to avoid artificially assigning aspects of written fantasy productions into predetermined categories. Such categories were commonly designed for analyses of particular fantasy materials (i.e. TAT classifications) and significantly biased end results when applied to other forms of fantasy productions. The alternative procedure chosen eliminated the need for pre-determined criterion for evaluating subject consistency. That is, judges were merely requested to sort or catalogue protocols which appeared to originate from a single subject, in a single unit. This method, in no way, was more or less applicable to a particular form of fantasy material employed.

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*R. Cartwright, personal communication (1976).

Fantasy protocols evaluated and sorted by judges were prepared as previously described under "protocols." The retained and edited dreams from each subject were stapled together and treated as a single unit to be evaluated by judges. An identical procedure was followed for each form of fantasy samples (i.e. free fantasies, written samples, and TAT's). Judges were requested to determine the four protocol units which belonged to a single subject (one protocol unit from dreams, free fantasies, written samples, and TAT's each) from a subgroup of four subjects' protocols. Subgroup membership was structured such that sex of the four subjects was held constant, irrespective of anxiety level.

Judges were asked to make the above determination,on a second occasion, with four different subjects' protocols. On this occasion, subgroup membership required that anxiety level of the four subjects be held constant while the sex of subjects varied. Instructions to the judges are provided in Appendix F, under "task 1."

Judges were also required to analyze all subjects' protocols according to two pre-determined criteria. That is, judges were requested to subjectively sort dreams, free fantasies, written samples, and TAT's respectively into three groups according to subjects' anxiety level (low, medium, or high). Judges similarly carried out a second sorting procedure with regard to subjects' sex membership (male or female). Refer to Appendix F, "tasks 2 and 3" for specific instructions to judges. Protocols from all 48 subjects were sorted by judges in this phase of the study.

Rating Procedures

The raters' task was to provide simple word counts for each subject's fantasy protocols. These word counts served as an observable and quantifiable index of a structural property of written fantasies. Raters met for a total of five hours to discuss a reliable system for counting words. A general guideline for obtaining consistent word counts for dreams was provided (see Appendix G) at these sessions, and several "practice" protocols were examined conjcintly by the three raters. The general guidelines utilized were abstracted from a scoring system previously devised by Foulkes and Shepherd (1970).

Analyses

The analyses related to each hypothesis are specified in detail by the hypotheses in the Results chapter.

CHAPTER III

RESULTS

Ho_1: Written productions arising from four different forms of fantasy mentation (dreams, free fantasies, written samples, and TAT's) of an individual have sufficient coherence to be recognizable as originating from the same individual.

Six judges were initially provided with 16 fantasy protocols, presented in stacks of four dreams, four free fantasies, four written samples, and four TAT's. Judges were asked to sort these protocols into four complete sets according to subjects. Hence, each set was to contain a protocol from each of the four fantasy materials believed to belong to a single subject. This was repeated for a second set of four subjects. Overall, each judge arrived at eight sets of protocols believed to belong to eight different subjects.

The results of judges' blind sortings were examined with respect to each individual judge's ability. First, each judge's performance was evaluated in terms of the number of correct matches obtained on each of the eight sets sorted. The number of matches obtained was defined in the following manner: "No match" was defined as all four protocols within a single set belonging to four different subjects, "one match" as two protocols within a set belonging to a single subject, "two matches" as three protocols within a set belonging to a single subject, and "three matches" as all four protocols within a set belonging to a single subject.

Based on the above criteria, judges' performance in deriving sets of protocols containing zero to three possible matches was evaluated according to combinatorial probabilities. It was determined that for each set of protocols, with zero to three correct matches, the following probabilities and resultant levels of statistical significance applied:

Zero matches = 6/64 = .0937
One match = 45/64 = .7000
Two matches = 12/64 = .1875
Three matches = 1/64 = .0156.

Hence, only in those cases when all four levels of fantasy material were correctly matched did a judge perform at a greater than chance level. There were two judges (Judges 1 and 3) capable of performing this task at a greater than chance level ($p = .0156$) on at least one set of protocols. In fact, Judge 3 performed this task at a statistical level of significance on five sets while Judge 1 demonstrated a similarly high level of performance on two sets (Table 1).

In addition to examining the number of significant matches obtained by each judge on each of the finally derived sets, judges' performance was evaluated according to an overall measure of ability. Summing the number of

Table 1

Number of Matches Obtained by Each Judge per Subject

Judge	Subject No.	Task 1				Task 2			
		7	26	32	40	19	21	29	41
1		1	3*	2	2	1	1	2	3*
2		1	2	1	0	1	0	2	1
3		2	1	1	3*	3*	3*	3*	3*
4		1	1	2	2	1	1	2	1
5		2	2	2	2	2	0	2	2
6		1	2	1	2	1	0	1	0
	Total matches per subject	8	11	9	11	9	5	12	10

*p = .02.

matches obtained on all eight sets for each judge provided an adequate and overall measure of each judge's ability. Each judge's score is recorded in Table 2 under the column entitled "sum of matches." The sum of matches theoretically ranged from 0 to 24 matches. Cummulative probabilities were determined for each number of possible matches (refer to Table 3) and significance levels calculated. The significance level for each obtained sum of matches can also be observed in Table 2. These figures indicate wide differences in individual judges. Judge 3 obtained 19 matches at a highly significant level ($p = .00002$), followed by Judge 1 who obtained 15 matches at the .004 level, and Judge 5 who obtained 14 matches at the .013 level. Judges 2, 4, and 6, however, showed little evidence of appropriate sorting.

The observation that 50% of the judges' overall level of high performance occurred at a greater than chance level seemed impressive, but inconclusive. To determine how likely this outcome would have occurred by chance alone, the judges' performance as a group was examined according to previously determined probabilities (see Table 3). Using the formula $p = [1 - (.999979)^6]$, given a total of six judges, it was observed that the probability of one judge out of six obtaining 19 matches or more by chance alone was highly rare ($p = .00126$). In this study, not only did one judge actually obtain 19 matches (Judge 3), but two

Table 2

Total Number of Matches Obtained by Each Judge

Judge	Matches				Sum of Matches	Probability
	0	1	2	3		
1	-	3	3	2	15	.004**
2	2	4	2	-	8	.803
3	-	2	1	5	19	.00002**
4	-	5	3	-	11	.193
5	1	-	7	-	14	.013**
6	2	4	2	-	8	.803
N	5	18	18	7		
%	10	37	37	14		
Probability	.09	.70	.19	.01		

$*p \le .02$.
$**p \le .01$.

Table 3

Cumulative Probability

Total Matches Equal:	Probability Equals:	Cumulative Probability Equals:
0	0.000003	0.000003
1	0.0	0.000003
2	0.000181	0.000184
3	0.000458	0.000642
4	0.003972	0.004614
5	0.014612	0.019220
6	0.055666	0.074892
7	0.121880	0.196772
8	0.211999	0.408771
9	0.222314	0.631085
10	0.175995	0.807080
11	0.104371	0.911452
12	0.053192	0.964644
13	0.022175	0.988818
14	0.008862	0.995680
15	0.002941	0.998621
16	0.001014	0.999635
17	0.000259	0.999894
18	0.000084	0.999979
19	0.000014	0.999993
20	0.000005	0.999998
21	0.0	0.999998
22	0.0	0.999999
23	0.0	0.999999
24	0.0	0.999999

additional judges (Judges 1 and 5) succeeded in obtaining 15 and 14 matches at a greater than chance level (p = .00432 and p = .01319, respectively). Judges were clearly engaging in non-random sorting.

The results for Hypothesis 1 suggested that subjects consistently revealed themselves across various forms of fantasy material such that one-half of the judges (three out of six) discriminated one individual from another at a highly significant level. That fantasies from each of the four fantasy levels of one subject could be successfully distinguished by judges from those of another subject attested to the presence of some form of coherence across levels. Dreams, free fantasies, written samples, and TAT's all appeared to be orderly, non-random, meaningful events. In conclusion, these results are compatible with Hypothesis 1 and lend adequate support for its acceptance.

Ho_2: Written productions arising from four different forms of fantasy mentation can be accurately and reliably sorted by judges into either of two discrete domains (male or female) according to subject's stated sex.

The six judges were required to subjectively sort all dreams, free fantasies, written samples, and TAT's, respectively, into two categories according to subjects' sex membership (male or female). For each of the four fantasy productions, both the most accurate (valid) and the most reliable among a set of six judges were determined according to their ability to sort subjects by sex. Judges' ability was evaluated by use of a computer program specifically designed to assess rater agreement and rater bias for qualitative (nominal and ordinal) data (Chicchetti, Aivano, and Vitale, in press).

Judges were evaluated for accuracy by comparing their performance on each of the four sorting tasks (one sort per fantasy production) to a criterion or "expert judge." Judge 7 represented the correct response or criterion in all cases throughout this study. In Table 4 judges are listed in rank order according to ability to accurately classify 48 subjects by sex on each of the four fantasy productions. Note by this method, an observed agreement (expressed as a percentage) between a judge and the expert judge of at least 67% yielded a p value of .02 or greater.

With respect to dreams, three out of six judges (Judges 3, 4, and 5) were able to determine subjects' sex at a greater than chance level ($p \leq .02$). On free fantasies, four out of six judges (Judges 2, 3, 4, and 5) engaged in non-random sorting. Similarly, on TAT's and written samples, five out of six judges (all but Judge 4) were successful in determining subjects' sex at a greater than chance level.

In Table 5 these results are summarized for each judge per fantasy level. Judges' sorting of sexual identity on written fantasy productions was significantly related to the actual sex of subjects by 50% of the judges on dreams, 67% of the judges on free fantasies, 83% of the judges on written

Table 4

Ranking of Judges According to Ability to Accurately Classify Subjects by Sex on Each of the Fantasy Levels

Judge Pair	Observed Agreement	Expected Agreement	Z of Kappa	p Value
		Dreams		
5,7	.75	.50	3.46410	0.00053*
4,7	.71	.50	2.88675	0.000389*
3,7	.67	.50	2.30940	0.02092*
6,7	.63	.50	1.73205	0.08326
1,7	.58	.50	1.58333	0.24821
2,7	.54	.50	0.50000	1.00000
		Free Fantasies		
3,7	.83	.50	4.61880	0.00001*
2,7	.71	.50	2.88675	0.00389*
4,7	.71	.50	2.88675	0.00389*
5,7	.71	.50	2.88675	0.00389*
1,7	.63	.50	1.73205	0.08326
6,7	.63	.50	1.73205	0.08326
		Written Samples		
3,7	.79	.50	4.04145	0.00005*
1,7	.75	.50	3.46410	0.00053*
2,7	.67	.50	2.30940	0.02092*
5,7	.67	.50	2.30940	0.02092*

Table 4—(continued)

Judge Pair	Observed Agreement	Expected Agreement	Z of Kappa	p Value
6,7	.67	.50	2.30940	0.02092*
4,7	.63	.50	1.73205	0.08326
		TAT's		
3,7	.79	.50	4.04145	0.00005*
2,7	.71	.50	2.88675	0.00389*
5,7	.71	.50	2.88675	0.00389*
6,7	.71	.50	2.88775	0.00389*
1,7	.67	.50	2.30940	0.02092*
4,7	.58	.50	1.15470	0.24821

*$p = \leq .02$.

Table 5

Summary or Judges' Accuracy in Cataloguing Subjects by Sex per Fantasy Level (Percentage Agreement)

	Judge					
Fantasy Level	1	2	3	4	5	6
Dreams	58	54	67*	71*	75*	63
Free fantasies	63	71*	83*	71*	71*	63
Written samples	75*	67*	79*	63	67*	67*
TAT's	67*	71*	79*	58	71*	71*

*$p \leq .02$.

samples and TAT's. Also, two judges (Judges 3 and 5) significantly differentiated sex with all four levels of fantasy. Hence, there is substantial evidence to suggest that written productions arising from dreams, free fantasies, written samples, and TAT's each can be validly sorted by judges according to subjects' sex. This finding lends strong support to the first half of Hypothesis 2.

Judges' ability was also examined with respect to reliability. Based on a total of seven judges (six plus an "expert judge"), a program from Cicchetti's statistical package was used to compare the relative levels of all possible 21 interjudge agreement pairings. This was accomplished utilizing a system presented and described fully by Aivano, Cicchetti, and Levine (in press), which compared each judge, relative to all others, using ranking systems based on levels of chance-corrected agreement. Chance-corrected agreement was measured by z of kappa values. First, ranks for the 21 comparisons were summed to obtain a composite rank which reflected each judge's reliability, relative to the remaining judges. By comparing the composite rank scores of judges in Table 6, those judges with the lowest scores were identified as the most reliable and those with the highest scores as the least reliable. For example, on the dream sort, Judge 5 was the most consistent with other judges and Judge 2 the least consistent. In comparison with data presented in Table 4, it was noted that Judge 5 was also the most accurate and Judge 2 also

Table 6

Sex Sort: Ranking of Judges by Composite Scores for Each Fantasy Level

Judge	Composite Rank Sum
Dreams	
5	51
4	54
1	55
3	63
6	67
2	109
Free Fantasies	
3	43
2	68
5	75
4	79
1	80
6	83
Written Samples	
3	37
1	43
2	65
4	77
5	78
6	89
TAT's	
3	41
6	61
1	65
2	65
5	73
4	111

the least accurate. On free fantasies, Judge 3 was the most consistent as well as the most accurate and Judge 6 the least consistent and the least accurate. Again, on written samples, Judge 3 was the most consistent and the most accurate, while Judge 6 was the least consistent and next to least accurate. And finally, on TAT's, Judge 3 was the most consistent and the most accurate and Judge 4 the least consistent and the least accurate. On the above sorting task, judges' reliability and validity tended to be strongly associated. However, this tendency was only documented for judges at the extremes of the continuum.

A second method of evaluating judges' reliability took into consideration not only the "relative" position of each judge, but also the "absolute" level of z values for each judge. That is, judges were ranked according to the number of significant ($p \leq .05$) z of kappa values among the 21 comparisons associated with judges. The results of this ranking system are presented in Table 7. As can be seen from comparing Tables 6 and 7, the rank orderings of judges produced by the two ranking systems are quite similar although not identical. By omitting those judges with no significant z values and including only those judges with at least two significant z values, this second method was useful in determining those judges who demonstrated a high degree of inter-judge reliability. According to this criterion, five out of six judges (83%) could be considered

Table 7

Sex Sort:
Ranking of Judges by the Number of Significant Z Values for Each of the Fantasy Levels

Judge	$p \leq .05$ Level
Dreams	
5	4
4	3
1	2
3	2
6	2
2	0
Total:	13
Free Fantasies	
3	4
2	2
4	2
5	2
6	0
1	0
Total:	10
Written Samples	
1	6
2	6
3	6
6	5
4	4
5	4
Total:	31

Table 7—(continued)

Judge	$p \leq .05$ Level
TAT's	
3	5
6	3
1	3
2	2
5	2
4	0
Total:	15

Note: "Total" represents a total of the number of times each judge was significantly paired with another judge.

reliable when sorting dreams, four out of six (67%) when sorting free fantasies, six out of six (100%) when sorting written samples, and five out of six (83%) when sorting TAT's. These findings lend substantial support to the hypothesis that judges can reliably sort subjects according to sex on each of the four fantasy productions.

The results presented in Table 7 also suggested that the various fantasy materials were differentially sorted as to sex by judges as a group. Clearly, written samples were more reliably sorted by judges than any other fantasy material. While sorting written samples, there were 31 occasions when judges were significantly ($p \leq .05$) paired with other judges. This was in marked contrast to 15 occasions on TAT's, 13 occasions on dreams, and 10 occasions on free fantasies.

In summary, the above reported findings with respect to accuracy and reliability support Hypothesis 2 and Hypothesis 2 is accepted.

> Ho_3: Written productions arising from four different forms of fantasy mentation can be accurately and reliably sorted by judges into one of three discrete domains (low, medium, or high anxiety) according to subjects' obtained anxiety scores.

The six judges were again required to subjectively sort dreams, free fantasies, written samples, and TAT's. However, on this occasion, the criterion variable for sorting was anxiety rather than sex. This hypothesis was examined by use of a computer program identical to that used in testing Hypothesis 2. However, in testing Hypothesis 3, a "weighted" kappa statistic rather than an "unweighted" kappa was the statistic of choice. This decision was based on the fact that judges were asked to sort anxiety into one of three categories (low, medium, or high), ordering anxiety, in this case, along a continuous-ordinal scale. Cicchetti (1976) and others (Cohen, 1968; Fleiss, Cohen, & Everitt, 1969) have described the rationale for using weighted kappa with continuous-ordinal data rather than more conventional approaches such as Kendall's tau or Pearson's product-moment correlation. Unlike these conventional approaches, weighted kappa measures the degree to which the paired values of two variables are "identical" (not just "proportional") and allows credit for partial rater agreement, etc. Thus, in this study, a linear rater agreement "weighted" system developed by Cicchetti (1976) was used to assess rater agreement in sorting anxiety. This formula by Cicchetti determined the weights for complete rater agreement (always equal to 1), partial rater agreement (in this case, equal to 0.5), and total rater disagreement (always equal to 0). Specifically, on the three category "anxiety" scale (low, medium, and high), judges' confusion between both low and medium and medium and high received a weight of 0.5, whereas judges' confusion between low and high received a weight of 0 since this latter case represented the maximal possible confusion. In summary, this system took into consideration the observation that judge confusion between low and high categorization was more clinically serious than between low and medium categorization or between high and medium categorization.

As in Hypothesis 2, judges were evaluated both with respect to accuracy and reliability. In Table 8, judges are listed according to ability to accurately classify subjects by anxiety on each of the four fantasy productions. On all occasions of statistical significance $p \leq .02$.

With respect to dreams, four out of six judges (Judges 1, 4, 5, and 6) were able to determine subjects' anxiety at a greater than chance level. On free fantasies, three out of six judges (Judges 1, 5, and 6) were able to determine subjects' anxiety at a statistical level of significance. On written samples and TAT's, only two out of six judges (Judges 3 and 5) were capable of determining subjects' anxiety at a greater than chance level.

In Table 9 these results are summarized for each judge per fantasy level. Judges' sorting of anxiety on written productions was significantly related to the obtained anxiety rating of subjects by 67% of the judges on dreams, 50% on free fantasies, and 33% on written samples and TAT's. One judge (Judge 5) significantly differentiated anxiety with all four forms of fantasy. Furthermore, the observation that subjects' anxiety was sorted by at least two judges at a statistically significant level on each of the four

Table 8

Ranking of Judges According to Ability to Accurately Classify Subjects by Anxiety on Each of the Fantasy Levels

Judge Pair	Observed Agreement	Expected Agreement	Z of Kappa	p value
		Dreams		
6,7	.71	.56	3.01248	0.00259*
5,7	.69	.56	2.60169	0.00928*
1,7	.67	.56	2.19090	0.02846*
4,7	.67	.56	2.19090	0.02846*
2,7	.65	.56	1.78010	0.07506
3,7	.58	.56	0.54773	0.58388
		Free Fantasies		
1,7	.73	.56	3.42327	0.00062*
5,7	.69	.56	2.60169	0.00928*
6,7	.67	.56	2.19090	0.02846*
4,7	.63	.56	1.36931	0.17090
3,7	.58	.56	0.54773	0.58388
2,7	.56	.56	0.13693	0.89108
		Written Samples		
3,7	.69	.56	2.60169	0.00928*
5,7	.67	.56	2.19090	0.02846*
1,7	.63	.56	1.36931	0.17090
6,7	.63	.56	1.36931	0.17090

Table 8—(continued)

Judge Pair	Observed Agreement	Expected Agreement	Z of Kappa	p value
4,7	.60	.56	0.95852	0.33780
2,7	.58	.56	0.54773	0.58388
		TAT's		
3,7	.69	.56	2.60169	0.00928*
5,7	.67	.56	2.19090	0.02846*
6,7	.65	.56	1.78010	0.07506
4,7	.63	.56	1.36931	0.17090
1,7	.60	.56	0.95852	0.33780
2,7	.60	.56	0.95852	0.33780

*$p \leq .02$.

Table 9

Summary of Judges' Accuracy in Cataloguing Subjects by Anxiety per Fantasy Level (Percentage Agreement)

	Judge					
Fantasy Level	1	2	3	4	5	6
Dreams	67*	65	58	67*	69*	71*
Free fantasies	73*	56	58	63	69*	67*
Written samples	63	58	69*	60	67*	63
TAT's	60	60	69*	63	67*	65

*$p \leq .02$.

fantasy productions lends adequate support for acceptance of the first half of Hypothesis 3.

Judges reliability in sorting subjects according to anxiety was determined by two methods previously described with regard to Hypothesis 2. In brief, judges were initially ranked according to their composite rank sums (refer to Table 10). The results of these rankings showed, for example, that Judge 1 was the most consistent with other judges and Judge 3 the least consistent in sorting dreams. Comparing these results with data presented in Table 8, it was observed that Judge 1, although not the most accurate, was one of the more accurate judges, and Judge 3 was the least accurate. A similar trend was noted in comparing results from Table 10 with those from Table 8 for each of the fantasy materials. For example, in sorting free fantasies, Judge 1 was both the most consistent and the most accurate and Judge 2 both the least consistent and least accurate. In sorting written samples, the most consistent judge (Judge 6) was not one of the more accurate judges, whereas the least consistent judge (Judge 2) was also the least accurate. And finally, on TAT's, a similar relationship was observed. The most consistent judge (Judge 1) was not one of the more accurate judges, whereas the least accurate judge (again Judge 2) was also the least consistent.

With respect to sorting anxiety, judges' reliability and validity were strongly related for judges with lower

Table 10

Anxiety Sort: Ranking of Judges by Composite Score for Each of the Fantasy Levels

Judge	Composite Rank Sum
Dreams	
1	43
6	45
2	56
4	61
5	67
3	95
Free Fantasies	
1	47
5	49
6	50
4	59
3	67
2	104
Written Samples	
6	40
5	53
1	59
3	69
4	79
2	102
TAT's	
1	36
6	52
5	60
3	65
4	72
2	77

rankings. It was observed that with judges of higher reliability rankings there was a tendency (although not complete correspondence) for a similar relationship to occur.

Judges' reliability in sorting subjects according to anxiety was additionally assessed by ranking judges according to the number of significant ($p \leq .05$) z of kappa values. The results of this ranking system are presented in Table 11. In comparing results from Table 10 with Table 11, it was observed that the rank orderings of judges produced by the two systems were quite similar. By use of this second system, a subset of reliable judges who demonstrated reliability at a statistically significant level was derived. According to the same criterion used in choosing reliable judges in the sex sort, six out of six (100%) judges were observed to be reliable when sorting dreams according to anxiety, five out of six (83%) when sorting free fantasies and written samples, and six out of six (100%) when sorting TAT's. These findings lent substantial support to the hypothesis that judges can reliably sort subjects according to anxiety on each of the four fantasy productions.

The results presented in Table 11 also suggest that the various fantasy materials were differentially sorted as to anxiety by judges as a whole. Clearly, written samples were least reliably sorted by judges compared to other fantasy material. Recall that written samples were

Table 11

Anxiety Sort: Ranking of Judges by the Number of Significant z Values for Each of the Fantasy Levels

Judge	$p \leq .05$ Level
Dreams	
1	6
6	6
2	5
4	5
5	5
3	3
Total:	30
Free Fantasies	
1	5
6	5
5	5
3	4
4	4
2	0
Total:	23
Written Samples	
5	3
6	3
1	2
3	1
4	1
2	0
Total:	10

Table 11—(continued)

Judge	$p \leq .05$ Level
TAT's	
5	5
6	5
1	5
3	4
4	4
2	3
Total:	26

Note: "Total" represents a total of the number of times each judge was significantly paired with another judge.

more reliably sorted than other fantasy material when judges sorted subjects according to sex. All other fantasy materials were similarly sorted as to anxiety with 30 significant ($p \leq .05$) judges' pairings obtained on dreams, 23 on free fantasies and 26 on TAT's.

In summary, the above reported findings with respect to accuracy and reliability support Hypothesis 3 and Hypothesis 3 is accepted.

> Ho_4: Judges' ability to successfully sort written fantasy productions according to sex is similar across the four forms of fantasy materials.

Hypothesis 4 was evaluated from both a "clinical" and a "research" perspective.

By use of the clinical or individual judge approach, each judge's sorting ability on one fantasy level was compared relative to his own ability on another fantasy level. Based on judges' z of kappa values (refer to Table 4), Spearman rank correlation coefficients were computed comparing judges' consistency in accurately sorting sex across the four fantasy levels. The results are presented in section one of Table 12 under "r_s for accuracy." The absence of significant correlations indicated that judges were unable to consistently sort subjects according to actual sex membership across the various fantasy levels. That is, by use of the clinical approach, judges were found to display a differential ability in utilizing dreams, free fantasies, written samples, and TAT's when sorting subjects

Table 12

Spearman Rank Correlation Coefficients Based on Judges' Rankings

Sorting of Subjects	r_s for Consistency	r_s for Accuracy
By sex:		
Dreams versus free fantasies	.09	.37
Dreams versus written samples	-.14	-.20
Dreams versus TAT's	-.61	.03
Free fantasies versus written samples	.60	.31
Free fantasies versus TAT's	.19	.49
Written samples versus TAT's	.36	.66
By anxiety:		
Dreams versus free fantasies	.43	.64
Dreams versus written samples	.20	.13
Dreams versus TAT's	.49	.04
Free fantasies versus written samples	.71	.33
Free fantasies versus TAT's	.89*	-.04
Written samples versus TAT's	.83	.84
By sex and anxiety:		
Dreams versus dreams	-.31	.30
Free fantasies versus free fantasies	-.66	-.49
Written samples versus written samples	-.54	.67
TAT's versus TAT's	.24	.79

*p = .05.

by sex. Their sorting ability was dependent upon the fantasy material being sorted. The results displayed a judge/fantasy material interaction and provided non-substantial support for Hypothesis 4.

However, when judges' ability to utilize each of the fantasy levels was viewed as a whole, utilizing the traditional "group" research approach, very different results emerged. Based on Table 5, a complex chi square test was employed to compare judges' scores across fantasy levels. No significant differences were obtained when comparing judges' ability as a group to accurately perceive subjects' sex on any of the fantasy levels ($\chi^2 = 8.45$ with $\chi^2_{.05,15} = 25$).

In contrast to the clinical or individual judge approach the research or group approach, indicated that judges as a unit were highly consistent in sorting ability, irrespective of fantasy material. While the above reported findings are contradictory and vary with the assessment approach employed, there is evidence that consistency does exist across levels. Hypothesis 4 is therefore accepted.

> Ho_5: Judges' ability to successfully sort written fantasy productions according to anxiety level is similar across the four forms of fantasy materials.

As in Hypothesis 4, Hypothesis 5 was evaluated from both a clinical and a research perspective. Spearman rank correlation coefficients were computed, based on previously reported z of kappa values (refer to Table 8). The results of this analysis are presented in the second section of Table 12 under "r_s for accuracy." The absence of significant correlations indicated that judges were unable to consistently sort subjects according to actual anxiety level across the various fantasy levels. That is, given a clinical approach in which each judge was evaluated for internal consistency, it was found that judges displayed a differential ability in utilizing dreams, free fantasies, written samples, and TAT's when sorting subjects by anxiety. Thus, as when sorting by sex, judges were unable to reliably sort subjects by anxiety across the various fantasy levels. An observed judge/fantasy material interaction was non-supportive of Hypothesis 5.

However, different results were again obtained when a research "group" analysis was conducted. Based on Table 9, a complex chi square test was employed to compare judges' scores across fantasy levels. No significant differences were observed between judges' ability as a "group" to accurately perceive subjects' anxiety on any of the four fantasy levels ($\chi^2 = 3.86$, with $\chi^2_{.05,15} = 25$).

Not unlike the sex sort results, the anxiety sort results were contradictory, based upon the approach employed. The clinical approach suggested differential judges' ability while the research approach suggested consistent judges' ability across fantasy levels. Given evidence that judge consistency is possible, Hypothesis 5 is accepted.

> Ho_6: Subjects reveal their sexual identity consistently to judges across each of the four fantasy productions. A similar finding is expected to be observed with respect to subjects' anxiety level.

In evaluating the above hypothesis, "subject consistency" was defined in terms of "the percentage of judges who accurately perceived each subject's classification" on each fantasy level. Judge's accuracy on each subject was obtained from information provided by the computer program designed by Cicchetti et al. (in press). This program, which was previously described, essentially provided descriptive data regarding each judge's classification of each subject. By summing the number of judges who correctly classified each subject and dividing by the number of total judges, a percentage of accurate agreement was obtained for each subject.

By use of the above criterion and in order to obtain a measure of subject consistency, subjects were assigned ranks (1 through 48) on each of the fantasy levels and Kendall's rank order correlation coefficients were computed. The results of this analysis are presented in the right-hand column of Table 13 for both sex and anxiety sortings. With respect to sex, subject consistency was observed on free fantasies compared to written samples at a greater than chance level ($p = .04$). However, this relationship was

Table 13

Kendall Rank Order Correlation Coefficients

Sorting of Subjects	r_s for Consistency	r_s for Accuracy
By sex:		
Dreams versus free fantasies	.10	-.02
Dreams versus written samples	.13	.03
Dreams versus TAT's	.05	-.01
Free fantasies versus written samples	.23***	.20**
Free fantasies versus TAT's	.10	.17
Written samples versus TAT's	.27****	.12
By anxiety:		
Dreams versus free fantasies	.01	.09*
Dreams versus written samples	-.04	.10
Dreams versus TAT's	.03	-.02
Free fantasies versus written samples	-.07	-.04
Free fantasies versus TAT's	.05	.12
Written samples versus TAT's	.08	-.10
By sex and anxiety:		
Dreams versus dreams	-.23***	-.06
Free fantasies versus free fantasies	.02	-.15
written samples versus written samples	.003	-.28****
TAT's versus TAT's	-.03	.10

*p = .05.; **p = .04; ***p = .03; ****p = .01.

not a particularly strong one ($\tau = .20$). On the remaining five comparisons of fantasy material, subjects did not reveal themselves consistently to judges. Similarly, with respect to anxiety, subject consistency was observed on only one out of six comparisons. That is, subjects were consistent across dreams and free fantasies at a greater than chance level ($p = .05$). However, this relationship, while significant, was not impressively strong ($\tau = .19$). These findings suggested that with rare exception a different subset of subjects consistently revealed themselves (regardless of characteristic being observed by judges) on one level of fantasy mentation as compared to another level. Indeed, a number of negative correlations were observed, suggesting that a given subset of subjects blatantly revealing themselves to judges on one fantasy level might similarly be particularly unrevealing to judges on another level. These findings are incompatible with the hypothesized relationship and Hypothesis 6 is rejected.

In viewing these results, one might question whether the subjects, relative to each other, were indeed inconsistently expressing themselves across levels or whether judges' ability to perceive subject characteristics was highly inconsistent across levels.

A re-analysis of the data from a group "research" perspective was found to be instrumental in clarifying this question. The judges' scores on accurately perceiving subjects (obtained in the first part of Hypothesis 6) for dreams, free fantasies, written samples, and TAT's, respectively, were summed and averaged. These mean percentage scores of judges' overall ability as a group are presented in Table 14. An analysis of variance, by use of a randomized block design, was employed to compare the obtained means. On both the sex and anxiety sort, no significant differences were obtained between judges' ability as a whole to accurately perceive subjects on any of the four fantasy materials.

These latter findings, together with those initially stated in Hypothesis 6 indicated that while judges as a group were highly consistent in ability on each of the fantasy levels, they were not necessarily consistent on the same subjects on each level. Therefore, it was reasonable to conclude that subjects were indeed inconsistently revealing themselves across levels with respect to specified sorting criteria.

Ho_7: Written productions from each of the four fantasy materials are correlated at a greater than chance level according to structural analysis scores.

A simple word count, representing subjects' productivity on each of the fantasy materials, served as the structural measure to be examined on the fantasy productions. This was only one of many possible structural properties which could have been examined in this study. Given the sheer volume of fantasy material and lacking a reliable

Table 14

Comparison of Fantasy Levels According to Accuracy Scores Averaged over All Judges

		Mean	F Value	Significance Level
		Sex Sort		
Dreams		63.8958	1.25	0.1564
Free fantasies		70.1875		
Written samples		69.4583		
TAT's		69.3938		
	Overall mean:	68.2344		
		Anxiety Sort		
Dreams		44.3958	1.30	0.1182
Free fantasies		41.6667		
Written samples		41.2708		
TAT's		44.4375		
	Overall mean:	42.9427		

statistical program to evaluate more complex properties (i.e., grammatical classes such as nouns, verbs, etc.), word counts were considered sufficient and easily obtainable. During preliminary stages of this research, several statistical packages, including the General Inquirer by Stone, Dunphy, Smith, and Ogilvie (1966), in conjunction with the Harvard III Psychosociological Dictionary, were unsuccessfully employed. Major computer deficits were discovered in the program and it was subsequently dropped under the advice of Philip J. Stone, program originator at Harvard University.*

Word counts were obtained by three trained raters. These counts were made according to a set of guidelines outlined in Appendix G. Each rater scored one-third of the protocols. In addition, to ensure that all raters were obtaining word counts in a uniform manner, all three raters scored protocols from a common set of 12 subjects. A discrepancy of less than five words was found on all but three protocols. Each of the three discrepancies occurred on dream protocols, with 14, 12, and 6 word count differences. Clearly, dreams proved most problematic for raters in obtaining consistent word counts. This finding was accounted for by the significant amount of non-dream or extraneous material often included in the dream protocols by subjects. In summary, raters appeared to be highly consistent with each other in deriving word counts on the various fantasy protocols.

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*P. Stone, personal communication (1976).

Pearson product-moment correlation coefficients, appropriate for interval-ratio data, were calculated in comparing word counts for each of the forms of fantasy material. The results of this analysis are presented in Table 15. As anticipated, most (83%) of the comparisons showed differing forms of fantasy materials to be significantly correlated according to the previously determined structural property. The only non-significant pairing occurred between dreams and written samples. When the fantasy materials were ordered along a continuum from highly unstructured fantasies (dreams and free fantasies) to highly structured fantasies (written samples and TAT's), it was observed (see Table 15) that the strength of association, in most cases, was related to how closely the fantasy materials laid along this proposed continuum. That is, the two most structured fantasies displayed the strongest and most significant relationship ($r_{.001} = .54$) while the two most unstructured fantasies displayed the next strongest and most significant relationship ($r_{.01} = .34$).

In sum, the findings indicated a consistency in the structural properties of subjects' fantasy expressions for free fantasies compared with TAT's, written samples, and dreams; TAT's compared with written samples, dreams, and free fantasies; written samples compared with free fantasies

Table 15

Pearson Product-Moment Correlation Coefficients, Comparing Each of the Four Fantasy Levels According to Structural Analysis Scores

	TAT's	Written Samples	Dreams
Free fantasies	(.24) .05	(.25) .04	(.34) .01
TAT's		(.54) .001	(.31) .02
Written samples			(.05) .38
Dreams			

Note: Numbers in parentheses represent correlation coefficients. Numbers beneath represent significance levels for each cell.

and TAT's; and dreams compared with free fantasies and TAT's. There appeared to be a stability to the ordering of the structural property across various fantasy materials. These results lend substantial support to Hypothesis 7 and its acceptance.

> Ho_8: Structural analysis scores vary in relationship to subjects' anxiety levels on each of the four forms of fantasy productions.

A one-way analysis of variance test was employed to determine if the three anxiety groups differed significantly with respect to word counts on any of the fantasy materials. Only on the TAT was a significant ($p < .05$) difference obtained between groups. The mean structural analysis scores for each of the anxiety levels on the TAT's were as follows:

Low anxiety group = 114.4
Medium anxiety group = 93.8
High anxiety group = 147.4

Applying the LSD multiple comparison test to determine which groups differed significantly from each other, it was found that all three groups differed from each other. Subjects in the medium anxiety group had the lowest written output, while subjects in the high anxiety group had the highest written output.

In conclusion, structural analysis scores varied in relationship to subjects' anxiety levels on only one of the four forms of fantasy materials. Significant group differences were obtained on only the most structured fantasy material (TAT's) gathered from subjects. Therefore, insufficient support for Hypothesis 8 is found and Hypothesis 8 is rejected.

CHAPTER IV

DISCUSSION

This study attempted to establish by empirical examination the relevance of projective fantasy to various forms of "free" fantasy. Historically, dreams have been regarded as the royal road to the unconscious. However, whether the dream report significantly differs from other verbal fantasy reports has not been empirically established. No previous study has simultaneously compared four forms of fantasy reports, varying from highly structured to highly unstructured samples. As a review of the literature revealed, studies typically focussed on comparisons between dream reports and projective fantasy test results. Such studies generally reported a greater similarity than difference between dreams and projectives (Klinger, 1971). A weakness in the area of fantasy research has been the neglect of free fantasies (more representative of ongoing daydreaming) as they compare to dreams and projective fantasies.

The "criterion for comparison" was a critical variable in this and related research. In Chapter II, the rationale for choosing a subjective criterion over an objective content criterion was proposed. In short, while use of judges' subjective cataloguing procedure had major limitations (particularly with respect to generalizability), it allowed for an answer to the preliminary questions: "Are various forms of fantasy expression more similar than dissimilar, and are they all sensitive discriminators of individual differences?" Indeed, given the multitude of possible content categories from which to choose, the likelihood of choosing categories which would be equally sensitive discriminators for all forms of fantasy expression seemed improbable. Therefore, the subjective evaluation of judges was chosen as the least biased criterion for investigating these initial, yet critical, questions.

The decision to accept a subjective criterion received support when the results of Hypotheses 1 and 6 were viewed conjointly. The results of Hypothesis 1 suggested that subjects displayed consistencies which were easily detected by at least 50% of the judges, across four forms of fantasy material.

The results of Hypothesis 6 suggested that individual subjects displayed themselves inconsistently across fantasy forms with respect to previously specified criteria (sex and anxiety). Therefore, it does not appear advisable to "artificially" choose objective criteria if an unbiased estimate of similarities across fantasy levels is to be observed. That is, subject consistency may exist across levels, but the categories chosen may not be sensitive reflectors of such similarities. It can also be seen from Hypothesis 6 that a major discrepancy in perceiving subject consistency across fantasy levels may be observed, depending upon the category being observed (i.e. sex versus anxiety). According to Kramer, Roth, and Palmer (1976), studies which have failed to discover significant correlations between dreams and TAT's have all utilized very limited categories for comparison. These authors warned that an adequate study of the relationship between various forms of fantasy productions must make an adequate number of content and/or structural comparisons. Perhaps the subjective, global approach, as used in this study, offers the widest range of comparisons which is possible without an exhaustive computerized content analysis system. Additional studies employing a much larger sample of judges should prove informative.

Hypothesis 1

The results of Hypothesis 1 are impressive. We know that subject consistency does exist across various forms of fantasy; we do not know on what basis these consistencies exist, however. Future studies may find the latter question a major challenge.

It might be argued that judges' ability to correctly catalogue protocols into complete "sets" as predicted in

Hypothesis 1 may have been affected by several uncontrolled factors. That is, judges' ability may have been affected by unique characteristics of particular subjects employed in this phase of the study. To determine whether there was a significant difference in the total number of matches obtained for each subject, Friedman's test (which is a chi square approximation) was employed. This test was calculated based on rank orderings of the number of matches obtained per subject across all judges. Friedman's test was calculated separately for judges' tasks 1 and 2. The results of this analysis for both tasks revealed no significant difference between subjects (on task 1, $\chi_r^2 = 2.6$, and on task 2, $\chi_r^2 = 6.66$ with $\chi^2_{.05,3} = 7.82$).

Given that chi square was approaching significance on task 2, it was not surprising to note that the widest range of discrepancies observed occurred between subjects included in task 2. Recall, on task 2, that the anxiety level of subjects was held constant while the sex of subjects varied. On this task there was a tendency for judges to obtain fewer matches on some subjects as opposed to others. Five matches were obtained on subject 21 (male) whereas 12 matches were obtained on subject 29 (female). That the sex of subjects may be an influential factor in judges' ability to recognize individual consistency across fantasy levels was only slightly suggested and is in need of further investigation. However, given the above results, it must be concluded that judge's ability to successfully catalogue various fantasy productions belonging to a single subject was not significantly related to the sex or anxiety of the particular subject being judged.

A second factor considered to possibly affect judges' ability to correctly catalogue fantasy protocols into complete sets was the stimulus materials employed. Therefore, the relationship between the four fantasy productions and judges' ability to match protocols of a single subject across fantasy levels was explored. To examine a possible fantasy level effect, the total number of times a particular fantasy material remained unmatched by a judge within a "set" was determined. This was determined for all judges. The resultant figures were rank ordered and Friedman's test was calculated to assess whether any one fantasy production was more difficult to integrate into a set than another. Overall, dreams remained unmatched on 25 occasions, TAT's on 19, written samples on 16, and free fantasies on 14. However, the results of Friedman's test revealed no significant difference ($\chi_r^2 = 4.85$ with 3 d.f. at the 0.18 level of significance) between fantasy productions, which remained unmatched within sets, and a possible "fantasy level effect" was rejected.

Given the limited number of judges and the limited number of subjects utilized in this exploratory research, it is proposed that an examination of observed trends (despite an absence of statistical significance) would be revealing. For example, it was previously noted in Hypothesis 1 that a tendency existed for dreams to be least often integrated into a set of four fantasy protocols. Recall that dreams were originally derived from a "sleeping state of consciousness" while free fantasies, written samples, and TAT's were derived from a "waking state of consciousness." Perhaps the presence of fantasies derived from both waking and sleeping states complicated (although not significantly) the judges' original task.

Judges' tasks may also have been complicated by the variable of "setting." Winget and Kramer (in press) found that the content of dream reports collected in various settings (i.e. at home, in the laboratory, in the hospital, etc.) varied depending upon the setting. Recall that in this study all fantasy reports were recorded and collected in the same setting (the sleep laboratory) except for dreams. Dreams were recorded at home upon awakening and were subsequently collected at the end of two weeks at the sleep laboratory. Perhaps the contrast in setting between dreams and all other forms of fantasy was a factor which affected the potential similarities to be discovered by judges. Previous research studies suggesting such "contamination due to setting" have been based on comparative studies utilizing specified content categories. It is difficult to assess the effects of setting upon fantasy reports when subjective judgments are the comparison criterion.

There was a third and critical factor to be considered in interpreting the results of Hypothesis 1. It could be argued that judges were correctly distinguishing individual fantasies based on recognizable differences in verbal style rather than on consistent psychological differences in individual fantasy productions. While this was possible, it was unlikely. During the preparation of each protocol for judges' cataloguing tasks, careful attention was given to editing proper names, places, and other unique verbal qualities. Furthermore, this experimenter did not readily observe a wide variation in verbal styles of subjects which would have easily served as clues to individual identities. And finally, an earlier study by Kramer et al. (1976) empirically demonstrated that judges of varying abilities and training were capable of distinguishing a single person's dreams of one night from those of another night. Such demonstration strongly argued against verbal style as the sole distinguishing feature of a subject's individuality on at least one form of fantasy mentation.

Hypotheses 2 and 3

In comparing the results from the sex sort (refer to the first half of Hypothesis 2) with those obtained in the anxiety sort (refer to first half of Hypothesis 3), it remained to be explained why judges tended to experience more difficulty accurately sorting anxiety than sex on at least three of the four fantasy materials. It is proposed that judges were required to make "finer" discriminations when sorting subjects by anxiety (i.e. sort according to three related categories) than when sorting subjects by sex (i.e. sort according to two discrete categories). Hence, a feasible explanation emerges with respect to the anxiety sort. Perhaps a particular anxiety category (most likely the middle category) was more difficult for judges to accurately discriminate than others.

In order to determine whether judges had, in fact, found it more difficult to accurately sort one of the anxiety categories as opposed to another, a statistical procedure for assessing "specific" category reliabilities was performed (Cicchetti, Fontana, & Dowds, 1977). In this study, each specific agreement index (expressed as a kappa value) defined how much agreement there was for each category of anxiety in terms of the average frequency with which judges utilized each category. The results of this analysis are presented in Table 16, comparing each judge with Judge 7 (the correct response) for each of the four fantasy productions. The kappa values range from 0 to 1, with a higher value of kappa representing greater judge agreement. With the exclusion of Judge 3 on dreams, free fantasies and TAT's, all other judges experienced less judge agreement on the

Table 16

A Comparison of Each Judge with Judge 7 on Each of the Three Levels of Anxiety, by Fantasy Level

Judge Pair	Dreams			Free Fantasies			Written Samples			TAT's		
	Anxiety Level	Kappa Value	Overall Kappa	Anxiety Level	Kappa Value	Overall Kappa	Anxiety Level	Kappa Value	Overall Kappa	Anxiety Level	Kappa Value	Overall Kappa
1,7	Low	.22	.25	Low	.44	.19	Low	.25	.16	Low	.13	.11
	Medium	.16		Medium	.16		Medium	.06		Medium	-.03	
	High	.14		High	.50		High	.11		High	.19	
2,7	Low	.34	.20	Low	.06	.02	Low	.09	.06	Low	.03	.11
	Medium	-.13		Medium	-.03		Medium	-.03		Medium	.06	
	High	.28		High	.00		High	.09		High	.22	
3,7	Low	.06	.06	Low	-.03	.06	Low	.34	.30	Low	.25	.30
	Medium	.06		Medium	.16		Medium	.25		Medium	.34	
	High	.06		High	.09		High	.28		High	.11	
4,7	Low	.31	.25	Low	.22	.16	Low	.13	.11	Low	.25	.16
	Medium	-.13		Medium	-.22		Medium	-.03		Medium	.06	
	High	.44		High	.34		High	.19		High	.13	
5,7	Low	.38	.30	Low	.41	.30	Low	.31	.25	Low	.22	.25
	Medium	.16		Medium	-.11		Medium	.06		Medium	.16	
	High	.31		High	.47		High	.41		High	.34	
6,7	Low	.41	.34	Low	.34	.25	Low	.22	.16	Low	.19	.20
	Medium	.16		Medium	-.03		Medium	-.03		Medium	.16	
	High	.41		High	.34		High	.22		High	.25	

medium anxiety category, as compared to the low or high anxiety categories. This was true regardless of fantasy material being sorted. In short, on 88% (21 out of 24) of the sorts, the level of judges' accuracy on the middle category was less than obtained on either category at the extreme. This seemed to suggest that judges' accuracy might have increased had judges only been required to sort subjects according to two anxiety categories (low and high) rather than the required three. In conclusion, the results, as shown in Table 16, indicated a judge/anxiety level interaction which could account, in part, for judges' increasing difficulty sorting subjects according to anxiety versus sex classification.

As further evidence of judges' difficulty in making discriminations, it was observed that when sorting by sex, judges tended to sort more accurately on structured fantasies versus unstructured ones. An opposite trend was observed on the anxiety sort.

Specifically, when sorting subjects by sex, the use of written samples alone or TAT's alone provided sufficient information for all but one out of six judges to successfully sort subjects at at least the 0.02 level of significance (Table 4). The same judge (Judge 4) was unsuccessful on both of the above fantasy levels.

In contrast, when sorting subjects by anxiety, the use of dreams alone provided a majority of the judges (4 out of

6) with sufficient information to successfully sort subjects at at least the 0.02 level of significance (Table 8). Additional unstructured fantasy material (free fantasies) did not increase the number of judges capable of such accurate sorting. One judge (Judge 2) was unable to successfully sort subjects at a statistical level of significance on all four forms of fantasy material, regardless of degree of structure. Another judge (Judge 3) was able to obtain successful sorts at a statistical level of significance only on the more highly structured fantasy materials (written samples and TAT's). Therefore, in situations requiring complete accuracy of judges' evaluations of a "latent" quality (i.e. anxiety), a combination of structured and unstructured fantasy protocols from each subject would be necessary. If the experimenter were simply interested in obtaining a significant number of accurate evaluations from a large number of judges, a single, unstructured fantasy material (i.e. dreams) from each subject would be sufficient.

In summary, when subjectively evaluating subjects with respect to a quality of a more "manifest" nature (i.e. sex membership), utilization of a single, structured fantasy material (i.e. TAT) would be sufficient. However, in evaluating subjects with respect to a more ambiguous "latent" quality (i.e. anxiety), unstructured fantasy material (i.e. dreams) would be more informative to a greater number of judges.

This latter finding is not surprising when related to past clinical knowledge. Clinicians (typically interested in more latent or underlying aspects of the personality) have known, based on experience, that individual differences are more readily observed in conjunction with an unstructured, ambiguous situation or stimuli. Such stimuli, like the Rorschach inkblots or dreams, allow more opportunity for individual expression to be observed.

Hypotheses 4 and 5

Viewed from two different perspectives (the clinical and the research), different conclusions for Hypotheses 4 and 5 emerged. Both perspectives were considered important to report, particularly in a preliminary study such as this. Given the research approach, caution in generalizing from such a limited sample of judges is clearly warranted. Interested in discovering which, if any, fantasy level is more valuable as a clinical tool, both approaches illuminated relevant issues. For example, judges functioning as individual clinicians appeared to find particular fantasy levels to be more transparent of subject characteristics than others. Judges functioning as a research group tended to find little difference in amount of accurate information they could cull from fantasy material available.

Results of Hypotheses 4 and 5 suggested a judge/fantasy material interaction when each individual judge's performance was observed. Perhaps a judge/sorting task interaction existed as well. To test this possibility, a comparison of judge's ability, relative to other judges, to consistently sort sex versus anxiety within the same fantasy material was carried out. That is, judges' scores for accuracy on the sex sort (presented in Table 5) were ranked and compared with judges' scores for accuracy on the anxiety sort (presented in Table 9) which were also ranked. These comparisons were made within each of the four fantasy materials. The above comparisons were made using Spearman rank correlation coefficients. This same procedure was also carried out, based on judges' scores for consistency (previously reported in Tables 7 and 11) which were ranked. The results of both sets of correlations are reported in the last section of Table 12. According to both criteria for ranking judges, none of the correlations were found to be statistically significant. These results suggest a judge/sorting task interaction. Thus, a judge's skill at sorting sex is not significantly related to his skill at sorting anxiety, given the same level of fantasy material. In fact, with respect to the second criterion, an opposite trend seemed to emerge. That is, for dreams, free fantasies, and written samples, judges' consistency in sorting sex was negatively correlated with ability to sort anxiety. These findings, however, were not statistically significant.

In conclusion, utilizing the individual clinical approach (each judge relative to himself), judges not only displayed differential ability in utilizing various forms of fantasy material, but also displayed a differential ability in sorting subjects according to two categories (sex and anxiety) within each fantasy level.

It is important to note that a judge/sorting task interaction was observed with variables (sex and anxiety) which were reflective of "trait" qualities of subjects. Recall that anxiety scores were stable (before and after data collection scores remained significantly correlated) over time and sensitive to enduring psychological qualities of subjects. Similarly, sex membership is considered a "trait" variable. The extent to which judges are sensitive to "state" variables in subjects across fantasy levels requires future exploration.

Hypothesis 6

Results of Hypothesis 6 indicated that individual subjects inconsistently revealed themselves to judges across various fantasy levels. On the other hand, judges' ability as a group to accurately sort subjects according to specified criteria was observed to be unaffected by fantasy level. These results emphasize the importance of evaluating judges' performance within an appropriate context. That is, it is impressive to observe that judges as a group were able to consistently categorize subjects according to two objective criteria, despite individual subject's fluctuations in self-disclosure across fantasy levels.

In evaluating the ability of judges as a whole in the second half of Hypothesis 6, it was noted (see Table 14) that the obtained means for the anxiety sorts were strikingly lower than the obtained means for the sex sorts. To investigate this observation further, several t tests were calculated, comparing means on the sex sort versus means on the anxiety sort for dreams, free fantasies, written samples, and TAT's, respectively. The resultant t values along with their significance levels can be found in Table 17. Clearly, the differences are highly significant in all cases. Judges' overall ability on the sex sort significantly exceeded their overall ability on the anxiety sort.

The above-reported finding is compatible with the observed results of Hypotheses 2 and 3 (refer to discussion section, Hypotheses 2 and 3). In short, judges not only had difficulty evaluating subjects in the medium anxiety category, but they also had significantly greater difficulty evaluating subjects by anxiety than by sex, as a general rule. While judges were consistent in perceiving subject characteristics across fantasy levels, their performance level varied, depending upon the sorting criterion.

Table 17

Comparison of Judges' Overall Ability with Respect to Accuracy Within Fantasy Levels Across Two Different Sorts (Sex Versus Anxiety)

		Mean	t value	2-Tail Probability
Dreams	Sex:	63.8958	3.19	0.003*
	Anxiety:	44.3958		
Free fantasies	Sex:	70.1875	4.82	0.000*
	Anxiety:	41.6667		
Written samples	Sex:	69.4583	4.62	0.000*
	Anxiety:	41.2708		
TAT's	Sex:	69.3958	4.68	0.000*
	Anxiety:	44.4375		

*$t \leq .003$.

Hypothesis 7

With respect to Hypothesis 7, a review of the literature revealed that no study to date had examined the structural relationship between home collected dreams and any other form of fantasy mentation. Several studies which had compared laboratory collected dreams with structured (TAT's) and semi-structured (written samples) fantasies had reported discrepant findings, depending upon the fantasy materials employed and the structural properties examined.

In this comprehensive study, three fantasy levels were compared to home collected dreams with respect to "word count." Results of Hypothesis 7 indicated that a similarity in structure existed between all possible combinations of the four fantasy levels with the exception of dreams and written samples. Recall from a discussion of Hypothesis 1 that no single fantasy level was significantly more difficult to integrate into a set of four fantasy materials for each subject than another level. This finding supported the proposal that all four fantasy levels were reflective of content-related similarities which were unique to each subject. Viewed together, these results suggest that the four levels of fantasy are more similar than dissimilar with respect to both content-related and structurally-related properties, with a slightly greater similarity occurring across all four levels with respect to content.

Hypothesis 8

Results of Hypothesis 8 indicated that the structural property of word count did not discriminate significantly between subjects of varying degrees of anxiety on three out of four fantasy levels. Thus structural properties are not particularly revealing of known group differences on most forms of fantasy expression. In contrast, the results of Hypothesis 3 suggested that judges' content-related evaluations were sensitive to known group differences (i.e. high, medium, and low anxiety subjects). It is noted that the only fantasy level (TAT's) which reflected significant differences between subjects of varying degrees of anxiety in Hypothesis 8 was the least revealing fantasy level (in addition to written samples) in Hypothesis 3.

In conclusion, depending on whether the discriminating variable is structural or content-related, various forms of fantasy expression will appear sensitive to group differences.

Conclusions and Implications

The relevance and value of research on daydreaming and fantasy has recently been enhanced by the fact that many current treatment techniques have come to rely heavily upon the patient's ability to produce internal images (Singer, 1976). There must be an open interchange between therapeutic and research outcomes if newly developed imagery/

fantasy techniques are to be rooted in the scientific method. Surprisingly, little attention has been devoted to developing a systematic method for dealing with fantasy training within the context of psychotherapy. At an even more basic level, there has been little agreement among clinicians and researchers regarding an appropriate definition of the fantasy/daydreaming process.

In an attempt to define and clarify what daytime fantasies are "made of," researchers have often taken a correlational or comparative approach in assessing how dreams of the day correlate with and are continuous with dreams of the night, both from a content and a structural viewpoint. However, such comparisons were frequently limited by inadequate methodologies for collecting more natural samples of ongoing fantasy processes. As described in Chapter I, only recently have some innovative techniques for "thought sampling" been developed. Additional limitations arose out of inadequate content analyses systems. By necessity, content methods begin with a preconceived set of categories or events which are to be tabulated for each fantasy protocol. To predetermine what objective events will be "critical" in a comparison of various forms of fantasy seems unrealistic. Certainly, results would be biased by the categories chosen. Rather than employ a restricted range of critical criteria, the results of this study suggest that much can be gained from a "looser" procedure which allows the data to speak for themselves.

The experimental results, while implying the relevance of nightdreams to daydreams, also warn against hasty generalizations. That is, the data suggest the presence of a common thread coursing throughout the stream of primary process thinking. However, there are also data to suggest that the exact point of thought sampling (whether during the day or night) may bias what comes into the researcher's pail of water. In the tradition of Zen stories and consistent with observed results, the stream of fantasy mentation is best portrayed as ever changing, yet ever the same. That is, as the stream courses into caves, the water appears dark and deep; as it flows into open channels, it appears crystal clear and shallow. The same, yet different. While clinicians have long recognized a possible common source, they have pondered the numerous transformations. As the proposed image suggests, researchers have not begun to answer how transformations of primary process thinking occur, under what conditions observed differences and similarities between daytime and nighttime mentation are real versus illusionary, and at what point in time the clinician might well be advised to dip his therapist's bucket into the stream of consciousness to secure the most productive sample of his client's inner fantasy experience.

While there are no answers to the questions proposed above, the data do "suggest" a common stream of activity to which an individual returns when disengaged from demands of the external environment. In comparison to content properties, structural properties of this stream of fantasy mentation also appear to be relatively unaffected by the "context" in which the fantasy mentation is evoked or occurs. Although the context seems to affect particular aspects or qualities of individual fantasy expression, the integrity or uniqueness of that fantasy expression is not destroyed. The data suggest, although not conclusively, that both the content and structural relationship of fantasy (dreams, free fantasies, written samples, and TAT's) are independent of the fantasy source.

Research employing the subjective evaluation of judges is not without problems. In this study, judge reliability was an important issue. However, more critical was the issue of judge accuracy (validity). Several analyses demonstrated the value of probing the data from more than one perspective. Certainly, analyses based on the single, individual judge's performance revealed, at times, judge inconsistency with respect to accuracy. In contrast, the "group" analysis for collective judge performance often demonstrated a high degree of overall judge consistency. While conflicting results were difficult to interpret, they uncovered an important factor. Direct application of research findings derived from a group analysis study may not be apropos to the individual clinician. In short, the results of this study imply the importance and existence of "clinical judgment." Clinical folklore suggesting "the test is as good as the clinician administering it" receives experimental support from this study. Ultimately, the individual clinician would be well advised to employ the fantasy material (whether it be highly sturctured or unstructured, derived from nighttime or daytime mentation, etc.) he/she is most comfortable and skilled implementing. All forms of fantasy have been demonstrated to be revealing of individual and group differences and hence valuable therapeutic tools. Therefore, let each clinician wield the tool most suited to his hand.

In conclusion, while the evidence is not overwhelming, there are visible undercurrents of consistency across the four forms of fantasy expression. Such evidence encourages a more in-depth search for specific consistencies across various aspects of fantasy mentation. In particular, this study provides preliminary evidence to support the relevance of projective fantasy to "free" fantasy.

APPENDIX A

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME ______________________ DATE __________

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I tire quickly	①	②	③	④
23. I feel like crying	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I am inclined to take things hard	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I try to avoid facing a crisis or difficulty	①	②	③	④
35. I feel blue	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

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APPENDIX B

DREAM DIARY

PLEASE READ THIS CAREFULLY AND SAVE IT. IT TELLS YOU WHAT TO DO ON THE NIGHTS YOU WILL COLLECT DREAMS FOR THE SLEEP RESEARCH PROJECT.

Dear Subject,

Here is a set of 14 sheets of paper for writing out dreams. Each sheet is for a different night's dream(s). The data at the top of each sheet should correspond with the morning when you wake up to record your dream(s).

It is very important that you fill out a dream recall inventory each morning immediately upon awakening. If at any time you forget to fill out your dream diary or do not recall a dream for some morning(s), record that on the page for that morning's report.

You may find the following hints for recalling and recording your dreams quite helpful:

1. Always keep your dream diary and pen by your bedside.
2. Suggest to yourself several times before falling asleep, "I shall catch a dream tonight," or whatever suggestion along this line appeals to you most.
3. Some people find it useful to sit up in bed and run through the dream mentally with eyes closed before turning on the light and attempting to record it. Do not immediately leap out of bed thinking you will mull it over while getting ready for school or work. The odds are that you will lose it. Write it down while still in bed.

   "Suggestions obtained from Dr. Ann Faraday's book, Dream Power."

And finally, if you have any questions regarding the above instructions, feel free to contact me at 377-6772.

Thank you,

Ginger E. Blume
Principal Investigator

Code______________
Sequence__________

For investigator's use

HOME DREAM RECALL INVENTORY

SS# _______________________

Date_______________________ Day_________ Time _________

APPENCIX C

ORAL INSTRUCTIONS FOR FREE FANTASIES

I WOULD LIKE TO READ SOME INSTRUCTIONS TO YOU BEFORE WE BEGIN THE FORMAL ASPECTS OF THIS PART OF THE STUDY. LISTEN CAREFULLY AND PLEASE ASK QUESTIONS IF YOU DO NOT UNDERSTAND WHAT TO DO. IN A FEW MINUTES YOU WILL BE HANDED A CLIPBOARD WITH SEVERAL SHEETS OF BLANK PAPER AND A PENCIL AS YOU ENTER THE EXPERIMENTAL ROOM NEXT DOOR. UPON ENTERING A PRIVATE CUBICLE, YOU WILL BE ASKED TO LIE DOWN ON A BED AND TO CLOSE YOUR EYES AND RELAX, AS IF YOU WERE GETTING READY TO GO TO SLEEP. BEFORE YOU LIE DOWN, YOU MIGHT WISH TO REMOVE YOUR SHOES SO THAT YOU ARE MORE COMFORTABLE. SHORTLY AFTER YOU LIE DOWN, A BUZZER WILL SOUND AND YOU WILL HEAR A NUMBER CALLED OUT. THIS NUMBER WILL BE A RANDOM NUMBER. PLEASE PICK UP YOUR PAPER AT THAT TIME AND WRITE DOWN THE NUMBER. THEN YOU ARE TO WRITE DOWN WHAT WENT THROUGH YOUR MIND JUST BEFORE THE SOUND OF THE BUZZER. TRY TO GIVE AS MUCH DETAIL AS POSSIBLE. IF YOU HAPPEN TO FALL ASLEEP (WHICH IS QUITE UNLIKELY), THEN NOTE THAT ON THE PAPER AT THAT TIME TOO. WHEN YOU ARE FINISHED WRITING, PLEASE LIE BACK DOWN AND RELAX AGAIN. YOU WILL BE ASKED TO FOLLOW THESE SAME INSTRUCTIONS SEVERAL TIMES. THIS PHASE OF THE STUDY WILL TAKE NO LONGER THAN ABOUT 30 MINUTES OF YOUR TIME. ARE THERE ANY QUESTIONS? ONE LAST THING, PLEASE WRITE LEGIBLY.

APPENDIX D

THOUGHT SAMPLE RESPONSE FORM

Code______________
Sequence__________

SS#________________________

THOUGHT SAMPLE #___________

For investigator's use

PLEASE DESCRIBE A "MEANINGFUL OR SIGNIFICANT LIFE EXPERIENCE" IN THE SPACE PROVIDED BELOW. YOU WILL HAVE 5 MINUTES TO RECORD YOUR RESPONSE. YOU MAY USE BOTH SIDES OF THIS PAPER IF NECESSARY.

[Note: Subjects received three thought sample sheets.]

APPENDIX E

TAT RESPONSE FORM

Code_______________
Sequence____________

SS#___________________________

For investigator's use

THIS IS A TEST OF IMAGINATION. I AM GOING TO SHOW YOU SOME PICTURES, ONE AT A TIME. AND YOUR TASK WILL BE TO MAKE UP AS DRAMATIC A STORY AS YOU CAN FOR EACH. TELL WHAT HAS LED UP TO THE EVENT SHOWN IN THE PICTURE, DESCRIBE WHAT IS HAPPENING AT THE MOMENT, WHAT THE CHARACTERS ARE FEELING AND THINKING. AND THEN GIVE THE OUTCOME. YOU MAY USE BOTH SIDES OF THIS PAPER IF NECESSARY.

I AM LOOKING AT CARD #______

[Note: Subjects received 10 TAT response sheets.]

APPENDIX F

INSTRUCTIONS FOR JUDGES

To enable you to work on this task alone, at your own pace, I have provided you with "cataloguing" sheets to record your responses for each of the three tasks you will be asked to complete. Please record your responses after each "sort" on the forms provided. You will merely record the number of the protocol(s) which is listed in the upper righthand corner of each index card.

There are 48 subjects in this study. You will receive four sets of fantasy productions from each subject:

Set 1: Five Free fantasies (FF), appearing on one or several index cards
Set 2: Two written Samples (WS)
Set 3: Two TAT cards (TAT and TAT-B).
Set 4: Two dreams.

Each index card has been clearly marked on the upper left-hand corner as to the "set" (i.e. FF, WS, TAT or TAT-B, and Dream) it belongs to.

Each fantasy protocol has been edited by the experimenter with respect to the following (note that an X indicates an instance of editing):

a. Proper names
b. Cities and countries
c. Pronouns "he" and "she"
d. Specific statements which clearly identify the sex of the subject.

Note that responses to the 1st TAT protocol were minimally edited since the stimulus is clearly the same for all subjects (i.e. a small boy looking at a violin). The blank TAT card was edited as usual.

Although I tried to preserve the protocols in their "original form," it was necessary to add or delete punctuation marks, insert connecting words, etc., on several occasions. In short, while preparing the protocols for typing, the experimenter's written style was, at times, superimposed on that of the subject.

Your task, as JUDGE, is to sort the fantasy protocols according to three different criteria, based on underlying qualities of the subject's personality. The three tasks are as follows (please complete in this order):

1st Task

You will be given fantasy mateirals from four different subjects. Each subject has contributed one set from four fantasy sources (FF, WS, TAT's and Dreams). Your task is to match correctly each of the four fantasy protocols that belongs to each subject. When you have completed this task, you will be asked to follow this same procedure with four different subjects' protocols.

2nd Task

You will be given TAT's from 48 subjects. You will be asked to sort these into two separate piles: males and females. There are an equal number of males and females in this study. Thus, you should end up with 24 protocols in each pile.

You will be asked to do this same task with each level of fantasy material (FF, WS, TAT's, and Dreams).

3rd Task

You will be given TAT's from 48 subjects. You will be asked to sort these into three separate piles: high, moderate, and low anxiety subjects. There are an equal number of subjects in each anxiety level. You should end up with 16 protocols in each of three piles.

You will be asked to do this same task with each level of fantasy material (FF, WS, TAT's, and Dreams).

APPENDIX G

GUIDELINES FOR RATERS

Briefly stated, the finally edited protocol is to include all non-redundant, descriptive statements made by the subject as to dream characters, settings, feelings, activities, etc.—that is, all statements referring to the dream's content.

1. Included are introductory statements such as "I was dreaming about . . ." (Note that all underlined material is included in the final protocol.)

2. Specifically excluded from the word count are subject's comments on formal properties of the dream, and, of course, his associations to waking experience (i.e. "I didn't get a chance to think of this till later, but in the dream").

3. The count is made of the subject's statements describing the content of the dream ("X hit Y") rather than its form ("the dream imagery was unclear and I don't think I believed it was really happening,"). Thus, the dream events are scored ("X hit Y"), but stylistic flourishes in recounting them are not ("X hit Y, I know it's hard to believe, but that's what happened in the dream"). Stylistic flourishes will generally be in the form of waking reactions to the dream (i.e. "Crazy I dreamed this, but a man was . . .").

4. Include material where the subject tells something of the sequencing and association of dream events with another (i.e. "This was in the first part of the dream; then in the second part . . ."). This is included since it adds to the understanding of the "content" of the dream.

5. Do not include subject's free associations to the dream (i.e. "This reminds me of my . . .").

6. If the subject's report is ungrammatical due to surplus wordage, reduce it to grammatical form (i.e. "The cat, he ran away").

7. If the subject changes his mind (i.e. "It was a red car . . . no, actually it was green"), count both phrases, since both are potentially useful to the dream analyst,

even if it means adding to the apparent ambiguity of the dream report.

8. Indicate statements of "exclusion" and "differentiation"; for example, "*There weren't any flowers in the garden*" is an example of exclusion, and "*In real life my pet is a collie; in the dream he was a boxer*" is an example of differentiation of a dream event from a particular waking event. Even though not literally descriptive of the dream, such statements seem potentially useful to the dream analyst. Statements of differentiation clarify the elements in the dream, while those of exclusion are significant under the general rule: "If someone thinks it is worth mentioning (even to exclude the possibility), it's worth counting and including."

9. If it is unclear as to whether a particular statement ("I did Y") refers to a dream event or a waking life association, consider that the material in question refers to the dream and include it according to the usual rules.

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BIOGRAPHICAL SKETCH

Ginger Elaine Blume was born in Lock Haven, Pennsylvania, on April 8, 1948. In September, 1966, she enrolled in Vanderbilt University, and in 1969, she transferred to the University of Florida where she received the degree Bachelor of Arts with a major in psychology in June, 1970. In September, 1972, she was admitted to the Graduate School and pursued her studies in clinical psychology. While in the Graduate School, she was employed on a graduate traineeship, levels I and II, for Psychology Service at the Veterans Administration Hospital in Gainesville, Florida. In addition, she was awarded a graduate assistantship in the Department of Child Psychiatry at Shands Teaching Hospital. She received the degree Master of Arts in August, 1975. Her master's thesis on the topic of sleep research was subsequently published. Ms. Blume completed her predoctoral clinical psychology internship at the Yale-affiliated Veterans Administration Hospital in West Haven, Connecticut, in 1976. Specializing in family and group therapy, she completed a second-year clinical internship at Elmcrest Psychiatric Institute in Portland, Connecticut. She is presently a member of the adjunct faculty at Middlesex Community College where she teaches in the Department of Psychology. Ms. Blume is clinical advisor to a residential halfway house and clinical consultant to several community mental health facilities. She plans to maintain a private practice and to conduct research in the area of fantasy and imagery as they relate to the therapeutic process.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Wilse B. Webb, Chairman
Graduate Research Professor of
Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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